

Volume-1

BLOCK-1	POPULATION AND HEALTH CARE	7
UNIT-1	Health and Development	9
UNIT-2	Demographic Indicators: Transition and Challenges	27
UNIT-3	Prevention and Management of Diseases	47
UNIT-4	Health and Population Policy	69
BLOCK-2	ISSUES AND CHALLENGES IN HEALTH CARE	89
UNIT-5	Reproductive and Maternal Health Care	91
UNIT-6	Child Health Care	109
UNIT-7	Adolescent Health Care and Life Cycle Approach	127
UNIT-8	Care of Elderly	143
BLOCK-3	HEALTH CARE SYSTEM AND STRATEGIES	159
UNIT-9	Primary Health Care Delivery System	161
UNIT-10	Civil Society and Health Care	178
UNIT-11	Behavioural Change Communication in Health Care	191
UNIT-12	Inter-Sectoral Co-ordination in Health Care	206

ORIGINAL PROGRAMME DESIGN COMMITTEE

Prof. Amita Shah
Gujarat Institute of Development Research
Ahmedabad

Prof. S. K. Bhati
Jamia Millia Islamia University, New Delhi

Prof. J. S. Gandhi (Rtd)
Jawaharlal Nehru University, New Delhi

Prof. Gopal Krishnan (Rtd)
Punjab University, Chandigarh

Prof. S. Janakrajan (Rtd)
Madras Institute of Development Studies Chennai.

Prof. Kumar B. Das
Utkal University, Bhubaneswar

Prof. Nadeem Mohsin (Rtd)
A.N.Sinha Institute of Social Sciences, Patna

Prof. P. Radhakrishnan
Madras Institute of Development Studies, Chennai

Prof. Ramashray Roy (Rtd)
Centre for Study of Developing Societies
New Delhi

Prof. R. P. Singh (Rtd)
Ex-Vice-Chancellor, MPUAT, Udaipur

Prof. K. Vijayaraghavan
Indian Agriculture Research Institute, New Delhi

Dr. Nilima Shrivastava, IGONU, New Delhi

Prof. B. K. Pattanaik, IGNOU, New Delhi

Dr. Nehal A. Farooquee, IGNOU, New Delhi

Dr. P. V. K. Sasidhar, IGNOU, New Delhi

REVISED PROGRAMME DESIGN COMMITTEE

Late Prof. T S Papola(Rtd)
Institute of Studies in Industrial Development
New Delhi

Prof. S. Janakrajan (Rtd)
Madras Institute of Development Studies Chennai.

Prof. S. K. Bhati
Jamia Millia Islamia University, New Delhi

Prof. Preet Rustagi
Institute of Human Development, New Delhi

Prof. Gopal Iyer (Rtd)
Punjab University, Chandigarh

Dr. S Srinivasa Rao
Jawaharlal Nehru University, New Delhi

Dr. S, Rubina Naqvi
Hindu College, University of Delhi, Delhi

Prof. Nadeem Mohsin (Rtd)
A.N.Sinha Institute of Social Sciences, Patna

Prof. Rajesh, Delhi University, New Delhi

Prof. B. K. Pattanaik, IGNOU, New Delhi

Prof. Nehal A. Farooquee, IGNOU, New Delhi

Prof. P. V. K. Sasidhar, IGNOU, New Delhi

Dr. Pradeep Kumar, IGNOU, New Delhi

Dr. Grace Don Nemching, IGNOU, New Delhi

Dr. Nisha Varghese, IGNOU, New Delhi

COURSE PREPARATION TEAM (Unit Writers & Editors)

Dr. Pradeep Kumar, IGNOU, New Delhi (Unit-1)

Prof. B. K. Pattanaik, IGNOU, New Delhi (Unit-2)

Prof. (Rtd.) A. K. Sood, NIHFWS, New Delhi (Unit-3)

Dr. Pradeep Kumar, IGNOU, New Delhi and

Dr. Pawan Kr. Sharma, CRRID, Chandigarh (Unit-4)

Dr. K M Ziyauddin, CSSEIP, MANUU, Hyderabad and

Ms. Renuka Pattanaik, NIHFWS, New Delhi (Unit-5)

Ms. Renuka Pattanaik, NIHFWS, New Delhi and

Dr. Vinod Kumar Yadav, Dept. of Sociology,
JMI, New Delhi (Unit-6)

Ms. Renuka Pattanaik, NIHFWS, New Delhi and

Dr. Pradeep Kumar, IGNOU, New Delhi (Unit-7)

Dr. Habibulla Ansari,
A N Sinha Institute of Social Studies, Patna (Unit-8)

Prof. (Rtd.) A. K. Sood, NIHFWS, New Delhi and

Dr. Pradeep Kumar, IGNOU, New Delhi (Unit-9)

Prof. B. K. Pattanaik, IGNOU, New Delhi and

Dr. Pradeep Kumar, IGNOU, New Delhi (Unit-10)

Prof. B. K. Pattanaik, IGNOU, New Delhi (Unit-11)

Prof. (Rtd) A. M. Khan, NIHFWS, New Delhi (Unit-12)

**General Editor &
Distance Formatting**
Dr. Pradeep Kumar
IGNOU, New Delhi

Content Editor
Prof. Madhu Nagla, MDU, Rohtak (Block 1)
Prof. B. K. Pattanaik, IGNOU, (Block 2)
Prof. Sanghamitra Sheel Acharya, JNU, (Block 3)

Language Editor
Ms. Sharikha Muthu,
DLF City, Gurgaon

Course Coordinator: Dr. Pradeep Kumar, IGNOU, New Delhi

PRODUCTION TEAM

Mr. K.N. Mohanan
Asst. Registrar (Publication)
MPDD, IGNOU, New Delhi

Mr. Babu Lal Rewadia
Section Officer (Publication)
MPDD, IGNOU, New Delhi

December, 2019

© Indira Gandhi National Open University, 2019

ISBN : 978-93-89668-59-9

All rights reserved. No part of this work may be reproduced in any form, by mimeograph or any other means, without permission in writing from the Indira Gandhi National Open University.

Further information on the Indira Gandhi National Open University courses may be obtained from the University's office at Maidan Garhi, New Delhi.

Printed and published on behalf of the Indira Gandhi National Open University, New Delhi by the Registrar, MPDD, IGNOU, New Delhi.

Laser Typeset by Tessa Media & Computers, C-206, A.F.E.-II, Okhla, New Delhi.

Printed at: Raj Printers, A-9, Sector B-2, Tronica City, Loni (Gzb.)

INTRODUCTION TO COURSE 'HEALTH AND DEVELOPMENT' (MDV-0115)

Dear Learner

Earlier you read about various aspects of development studies, its important issues and challenges. In this course you will study about various aspects of health and development. With increasing pace of development, health needs has also changed and thrust has given to holistic health irrespective of income, power and social status. Health has treated not as problem of individual or country / region rather global and collective responsibility like environmental problem. On the one hand knowledge of science has unravel micro organism, innovative techniques of disease diagnosis, innovation in medicine to address health problems; on the other hand new kind diseases emerged related to changed lifestyle called lifestyle diseases- cardiovascular problem, diabetes, cancer and other threats. Therefore, world has experience a dynamics of health concern with more attention and global solidarity for upcoming health challenges. This will help you to acquire knowledge about various aspects of health which has divided into five blocks- population and health care, issues and challenges in health care, health care system and strategies, training and research in health development, and last block on socio-economic dimensions of healthcare. These are extremely useful to those who are interested to start a career in health management and health related institutions. In this course you will study five blocks comprises total twenty units covers all important components of public health. These blocks are given in two volumes as following:

Volume-1

Block-1: Population and Health Care

It deals introductory concepts of health and development, the relationship between demographic variables and community health, the existing knowledge of prevention and management of diseases both communicable and non-communicable diseases, lastly it also discusses about public policies related to health and population in order to evaluate its impact on overall development. The block is divided into four units comprising Health and Development, Demographic Indicators: Transition and Challenges, Prevention and Management of Diseases, and lastly Prevention and Management of Diseases. All units focused to introduce basic relationship between population and health care.

UNIT-1 Health and Development: In this introductory unit the purpose is to explain the concept of health and development, its mutual relationship how ongoing development process given importance to health aspects and reciprocally how good health influence development. It elaborate issues both global and Indian context. Lastly it also discusses about health determinants.

UNIT-2 Demographic Indicators: Transition and Challenges: Second unit describes demographic aspects of health including the meaning and components of demography. It also describes various demographic indicators, its significance for health care. Further elaborated demographic transition and its challenges such as Age- Sex Structure, Changing Sex Ratio, Fertility measures, Mortality measures and other factors effecting health.

UNIT-3 Prevention and Management of Diseases: The focused on how prevention and management of diseases. Broadly it has classified communicable and non-communicable diseases for effective management, it also describes preventive and curative measures for communicable and non-communicable diseases, and upcoming challenges of management of diseases.

UNIT-4 Health and Population Policy: The unit analyses how public health policies has evolved till date and correspondingly changes in population policies particularly in India. It describes the objectives of health policy with National Health Policy -1983, 2002 and 2017. It discusses also concept and evolution of national population policies, Interface between national health policy and national population policy.

Block-2: Issues and Challenges in Health Care

In the last block of this course you read about 'Population and Health Care'. This block will introduce you to 'Issues and Challenges in Health Care'. The thrust has given to four phases of health conditions and emerging challenges pertaining to reproductive and maternal health care, child health care, adolescent health care and their life cycle approach, and lastly elderly health. All these four units elaborated various health issues and challenges covers different stages of human development and describe all these stages with health care issues and challenges.

UNIT-5 Reproductive and Maternal Health Care: It discusses reproductive health and reproductive process, function and system, venereal disease, female genital mutilation, male genital disease; maternal health including its important concepts and components: ante natal care, intra natal care, post natal care, reproductive health care, safe abortion, and maternal mortality.

UNIT-6 Child Health Care : It deals phases of childhood and child growth, child survival strategies, infant mortality, immunisation, nutrition education for child health care, childhood diseases and their management.

UNIT-7 Adolescent Health Care and Life Cycle Approach : The concept of adolescent deals both the present status and challenges of adolescent health, phases of adolescence, life cycle approach and importance, physiological issues of adolescents, adolescent health problems and health education, adolescent health programmes, and substance abuse.

UNIT- 8 Care of the Elderly: The unit focused to overall health concern of elderly and changes. It describes the concept and features of elderly, scenarios of elderly both global and regional, health problems of the elderly, challenges for the elderly and policy for the elderly.

Block-3: Health Care System and Strategies

In the last two blocks of this course you read about 'Population and Health Care' and 'Issues and Challenges in Health Care' which introduced to basic aspects of demography, its relations with public health and major issues as well as its challenges. In the third block 'Health Care System and Strategies' you will learn primary health care delivery system, civil society and health care, behavioural change communication in health care, and inter-sectoral co-ordination in health care.

UNIT-9 Primary Health Care Delivery System : It focused on primary health care: its concept and components, the structure of primary health care system; functions of primary health care centres; deficiencies of primary health care; last but important issues for development of primary health care.

UNIT-10 Civil Society and Health Care: The unit deals civil society: its meaning, structure and functions; civil society and health care: strength and limitations; Scope of CSO in Primary health care; PRIs and NGOs; Success stories.

UNIT-11 Behavioural Change Communication in Health Care : The unit discussed about Behavioural Change Communication (BCC) in health: its meaning and benefits; channels of BCC, strategies of BCC in Health care; barriers to BCC; and the guidelines of BCC.

UNIT-12 Inter-Sectoral Co-ordination in Health Care : This unit explains coordination- meaning and related concept; Intra and Inter-Sectoral Coordination (ISC); guiding principles for ISC; areas of ISC in public health; coordination mechanism and benefits of ISC; requisites for effective ISC and examples of some success. It deals with how health care system has evolved with time and space. Hence four sections you will learn about primary health care delivery system, civil society and health care, behavioural change communication in health care, and most importantly inter-sectoral co-ordination in health care.



ignou
THE PEOPLE'S
UNIVERSITY

Block

1

Population and Health Care

UNIT 1

Health and Development

9

UNIT 2

Demographic Indicators: Transition and Challenges

27

UNIT 3

Prevention and Management of Diseases

47

UNIT 4

Health and Population Policy

69

UNIT 1 HEALTH AND DEVELOPMENT

Structure

- 1.1 Introduction
- 1.2 Concept of Health and Development
- 1.3 Indian Context
- 1.4 Determinants of Health
- 1.5 Let Us Sum Up
- 1.6 Keywords
- 1.7 Reference and Selected Readings
- 1.8 Check Your Progress: Possible Answers

1.1 INTRODUCTION

Health is common concern since beginning of human civilization based on their knowledge and available resources. With the changing pace of time, people also known to new knowledge of health, environment and society, however, lack of scientific tools, lab techniques and unaware of micro organism society suffered many epidemic problem and communicable diseases such as diarrhea, chickenpox, smallpox etc. These diseases wiped out high collective mortality which has also led to orthodox and superstitions views about health in society. Today increasing trends of new knowledge of disease, global interactions and democratic values addressing health as a basic need. Therefore, the conception of health not limited to physical conditions only but many other factors. In this unit, you will study the concept of health, its relationship with ongoing development, its changing connotations both global as well as Indian scenario. You will also know major factors of health which affects basic health services and dynamics of epidemiology.

After going through the unit, the learner should be able to:

- a) describe the concept of health and its relationship with development;
- b) examine the conditions of health and development in India and its changing conditions;
- c) analyse major determinants of health linkages with development;
- d) what are major issues and challenges of health and ongoing development.

1.2 CONCEPT OF HEALTH AND DEVELOPMENT

Before understand the relationship between health and development, we should see these two concepts and it important characteristics. Health was often viewed as absence of disease, in this definition many aspects of health has excluded like illness, physical disorders, and undiagnosed health problems. The concept of disease has limit to include only those abnormal conditions of organism which are proved through pathology. This conventional approach of health was confined within biomedical paradigm and excluded individual beliefs and behavioral aspects. The notion of normal and abnormal is also relative and determined by the socio-cultural context. One society may see particular health problem as

disease while other society may consider it as normal like, Ascariasis a intestinal worm problem in young children rampant in Nigeria; Schistosomiasis health problem in blood vessel widely prevalent in Egypt but not considered as disease. Thus, people have belief and behavior related to health that stem from socio-cultural perceptions. Keeping all these limitation of the concept of health, a comprehensive definition developed by World Health Organisation in 1948, health has defined as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. This definition of health recognizes that health is not only a function of biology rather also included broad functions of psychology, sociology and other factors. Following these, a broader understanding of health developed under six important components of health focused on economic status, social conditions, political role, psychological influence, education system and environment condition.

The term development refers overall improvement of mankind with equity, access to basic needs, effective governance and efficient management of available resources, both physical and human. The concept of development evolved with various stages. Initially, the criteria of economic growth considered only indicator of development and accordingly countries like USA, few European countries and Japan with high economic growth termed as developed countries. Later on underdevelopment thinkers Wallerstein, Samir Amin posed critique of this model of development on increasing inequality in among countries as well as within country. They also indicated the resources of underdeveloped regions are exploited by the developed countries led poor development indicators in underdeveloped areas. Keeping these drawbacks in the concept of development re-defined and included the components, like- distributive justice, gender parity, environment and many other indicators. Broadly, it has also covered six broad headings-

- a) **poverty and inequality**- unemployment, casualisation of labor, increasing gap b/w rich and poor
- b) **people**- population dynamics, education, gender and health
- c) **Environment**- agriculture, climate change, biodiversity, water and sanitation
- d) **Economy**- economic growth, economic structure, income and savings, trade, labor productivity
- e) **States and Market**- business, stock markets, military, communications, transport, technology
- f) **Global links**- Debt, trade, aid dependency, refugee, tourism, migration

After going through broader concept of health the above first four indicators of development are directly link with health status of any region or country. Keeping these factors in mind the United Nations Millennium Development Goals (MDGs) has given special attention to health covering with eight broad indicators *to combat poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women* in 2000 with a target by 2015. It has felt that all goals are directly or indirectly linked with health problems. Three indicators are direct focus on health, reducing maternal mortality rate, reducing infant mortality and to combat *HIV/AIDS, malaria, and other diseases*. *Successive years have shown large extent success in these targets, maternal mortality rate has come down 45 percent between 2000 and 2015, infant mortality rate has reduced more than half from 90 to 43 per 1000 children between 1990 to 2015. Similarly, the causes of death and the status of diseases in 2016 revealed a major shift from*

communicable diseases to non communicable diseases. Besides these, WHO put a thrust on 'injury and violence' as important emerging category which reveals an increasing trend.

1.2.1 Health and Development: Historicity

From centuries the conditions of health and development indicators has drastically changed human life, its survival, health infrastructure and services. Health history witnesses that human living become longer, healthier and productive life with enhanced health facilities. Further, it has played important role for improved demographic structure. Healthy population resulted in better economic growth worldwide. The study shows between the 16th century and the mid-19th century, there was average life expectancy around the world around 40 years with little variation. Life expectancy slowly improved but steadily increased in the second half of the 19th century. It was much improved in the 20th century, initially in more developed countries and then in the rest of the world. (Table 1.1).

Table-1.1: Global Demographic Indicators Related Health and Development

No.	Health indicator	Region	1955-60	2000-05	2050-55 projection
	Mortality Rate (per 1,000)	World	17.4	8.4	9.6
		More developed region	9.7	10.3	12.2
		Less developed region	20.8	7.9	9.2
	Infant Mortality rate (per 1,00,000)	World	130	49	15
		More developed region	43	7	2
		Less developed region	149	54	15
	Fertility rate (per 1,000)	World	4.89	2.63	2.1
		More developed region	2.9	1.58	1.82
		Less developed region	5.92	2.84	2.25
	Life Expectancy (in Years)	World	49.33	67.20	77.62
		More developed region	64.82	75.59	84.51
		Least developed region	36.15	56.43	74.04

Source: United Nations, Department of Economic and Social Affairs, Population Division (2017).
World Population Prospects: The 2017 Revision, custom data acquired via website.

However, the underdeveloped countries have long burden of disease created severe public health problems like epidemic of cholera, malaria, smallpox, guinea worm, plaque and other communicable diseases till nineteenth century. During this period both birth rate and death rate was higher. A sizeable human mortality and poor health education changed the social perception towards survival of children and induced world's total fertility rate (TFR) till 19th century. Further, world's TFR has declined in twentieth century, the average number of children 5.05 per women (1950) to 2.49 per women (2015). Similarly, the life expectancy was also very lower during demographic transition phase particularly around

1750 to 1950. Infant mortality and maternal mortality was also very higher due to absence of basic health facility and education. Therefore, demographic indicators and characteristics have indicated not only the history of health status but also the knowledge about services, education and overall level of development. In this process underdeveloped countries were far behind than developed countries.

1.2.2 Changing Connotations

Economic historians and demographers still debate the genesis of these changes, but they increasingly point to rising incomes and health awareness (resulting improvements in sanitation and food availability) as the major cause of declines in 19th-century mortality rates. For the 20th century, however, they believe technical improvements were the catalysts— particularly the discovery of the germ theory of disease, a better understanding of medicine has certainly reduced communicable disease. However less developed economies continued to struggling few communicable diseases in sub-Sahara region and few Asian countries. However epidemiological studies reveals a shift from infectious diseases to chronic non-communicable diseases emerging being severe threats to the health system.

Recent studies of World Health Organisation, the global burden of diseases has recorded the causes of mortality under three broad categories- communicable diseases, non-communicable diseases and injuries. With the pace of increasing health facilities and development of health infrastructure has drastically improved public health system and demographic indicators. It has also given importance to the science of preventing disease, particularly reducing communicable diseases and prolonging life. It has promoted physical health through organized community efforts, like improving cleanliness and sanitation status as well as health education. Thus it has played dual role- one side, improved treatment of the diseases through effective medicine and services while on the other side improved preventive care techniques in society.

WHO health statistics reveals improved community health and prevention of communicable diseases. The increasing medical and nursing service for the early diagnosis, treatment of disease, increasing awareness of hygiene, sanitation, clean water and other components of health education had improved the health status worldwide. United Nation's demographic indicators are very explicit to shows the trends in mortality rate, fertility rate, maternal mortality rate and life expectancy of developed and less developed region of the world (table-1.1). Similarly, World Health Organisation (WHO) periodic reports reveal the improving communicable diseases and emerging new threats of non-communicable diseases (table-1.2). This shows total burden of disease rates, measured as the number of Disability Adjusted Life Years (DALYs) of all causes under 23 categories.

Table 1.2: Present Causes of Death and Burden of Diseases Globally (2017)

No.	Name of Disease	Number of people suffering (in Millions)	Percent
1.	Cardiovascular Diseases	350.00	14.66
2.	Malaria & Common infectious Diseases	229.96	9.63
3.	Cancers	213.22	8.93

4.	Other Non Communicable Diseases	196.04	8.21
5.	Neonatal disorders	163.57	6.85
6.	Mental and substance use disorders	162.51	6.81
7.	Musculoskeletal disorder	140.03	5.87
8.	Diabetes, blood & endocrine diseases	133.75	5.60
9.	Unintentional injuries	107.42	4.50
10.	Neurological disorders	103.58	4.34
11.	HIV/ AIDS and tuberculosis	101.13	4.24
12.	Respiratory diseases	92.53	3.88
13.	Transport injuries	78.05	3.27
14.	Diarrhea & neglected tropical diseases	75.00	3.14
15.	Nutritional deficiencies	60.94	2.55
16.	Liver diseases	38.86	1.63
17.	Self-harm	35.15	1.47
18.	Digestive diseases	34.37	1.44
19.	Interpersonal violence	23.57	0.99
20.	Other communicable disorder	23.47	0.98
21.	Maternal disorder	13.76	0.58
22.	Conflict and terrorism	10.33	0.43
23.	Natural disasters	0.168	0.01
24.	Total	2387.41	100

Source: WHO studies Global Burden of Diseases, 2017 (Adapted from Our World in Data)

The above mentioned global health statics indicates the changing trends of disease towards non communicable disease. WHO data also indicates new increasing trends of injuries with technological change and development. It has reflected in the reports of millennium development goals during 2000-2015. Thus the above mentioned trends of global health also indicated alarming growth of non-communicable diseases- Cardiovascular Diseases, Cancers, Diabetes, endocrine diseases, neurological disorders, injuries. This has also reflected that changing life style, food behavior and environment played a significant role. Keeping all these health concern, UN move with new development agenda called Sustainable Development Goals (SDGs) with 17 point goals for a better world by 2030. This has implemented in 2017 to end inequality, poverty and stop climate change; which will also directly result on health.

Therefore, development of any society's and well being depends on sound resources both human as well as physical resources. Healthy and active human resources play significant role towards all development parameters - Human Development Indicator, Gender Development Indicator, environment and ecological status. Apart from these factors, economic condition and polity play significant role to harness happy healthy human development. Health is central to economic growth and development discourse across the globe. United Nations in Millennium Development Goals listed eight components of development where the three components are focused to health problems i.e. child mortality, maternal mortality and HIV & related diseases.

In this section you studied the concept of health and its relationship with ongoing development process, now answer the questions given in Check Your Progress-1.

Check Your Progress 1

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) Define the concept of health?

.....

.....

.....

.....

.....

2) Discuss the relationship between health and development.

.....

.....

.....

.....

.....

1.3 INDIAN CONTEXT

Indian traditional medicine and health care system evolved through various stages since early civilization and it has originated before the birth of Christ. Indian medicine system have roots in *Vedas* particularly *Atharveda*. This health care system has existed for cure from diseases and prevention strategies. *Ayurveda*, Yoga & naturopathy evolved and practiced from ancient period. Whereas *Unani* health care came with Muslim rulers during medieval stage and homeopathy brought through European colonizers in India. Here we will study about three alternative health system *Ayurveda*, naturopathy and *siddha* which has originated and grown up in this sub-continent.

1.3.1 Traditional Health System

Ayurveda is well known system of traditional Indian medicine continued even today. Charak (physician), Sushruta (surgeon) Atreya and Jivak are well known contributors to this knowledge of traditional Indian health system. This Ayurveda system describes ancient theories on human body, etiology, symptomology and therapeutics for a wide range of diseases. It also includes sections on the importance of diet, hygiene, prevention, medical education, the teamwork of a physician, nurse and patient necessary for recovery to health. All these traditional knowledge of medicine system traveled and added in each generation. Two monumental works Charaka Samhita and Susrut Samhita are written by these experts. The Ayurveda system is based on *tri-dosh* (three balancing indicators)

called *kapha*, *vaat*, *pitta*. Any disturbance in three balances led to disease and disorder in health system.

Secondly the *Yoga* and naturopathy the most popular health care system which is deeply rooted in Indian tradition since ancient period. It is a system of health which links to complete well being of physical, mental and spiritual condition. It includes both healing as well as prevention strategies of diseases. According to Patanjali, there is eight components- Yama (abstentions), Niyama (observances), Asana (seating position), Pranayama (breath exercises), Pratyahara (Abstraction), Dharana (concentration), Dhyana (meditation) and Samadhi (liberation). Each stage is successive process which is considered liberation. Present increasing trends of psychological disorders, lifestyle diseases and non-communicable disorders has attracted people for yoga and naturopathy. The ill effects of allopathic system also made it more popular across the world, keeping its importance the United Nation celebrating International Yoga Day on 19 May.

Siddha medicine is also an alternative traditional medicine system evolved in ancient Tamil culture (South India and Sri Lanka). This knowledge has spread by Agastya and further through siddhars, who practice this system of medicine and spiritual teacher to transmit to next generation. *Siddhar* possessed with *ashta sidhis* (eight supernatural) powers, through possession diagnose and cure health problems. Apart from these, the knowledge about health system brought by external rulers/ colonizers from Arab culture/central Asia and Europe which became a part of Indian health care system through assimilation process. Yunani and Homeopathy are two well known alternative health care system widely prevalent in India. Yunani is Perso-Arabic system of medicine which is based on Greek physicians Hippocrates and Galen. It largely practiced by Mughals and Muslim of south Asia and central Asia. Four basic principles followed in this system called four humours: phlegm (balgham), blood (dam), yellow bile (cafrâ) and black bile (saudâ'), comparing with *tri-dosh* of ayurveda explicit its influence, similarly other influence of Chinese traditional health system also visible. Homeopathy is another area of alternate healing system originated outside and brought during British period in Indian. In 1796, Samuel Hahnemann created this system of healing with the principle of 'like cure like'. He considered that causes of disease in phenomena called miasm. Besides these, there are less popular healing systems known as 'Sowa-Rigpa' is Tibetan traditional medicine mainly practiced in Himalayan region. In India, this system is widely practice in Sikkim, Arunachal Pradesh, Darjeeling (West Bengal), Dharamsala, Lahaul and Spiti and Ladakh region. Above mentioned traditional alternative health system in India evolved with locally available natural resources for health needs. After independence, these traditional health system clubbed under the department of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy) since 1995, now looking its importance further developed a ministry of AYUSH with enhanced budgetary allocation and special attention to education and research.

1.3.2 After Independence Indian Health System

Despite existence of all these traditional alternative healing system, people and state institution largely dependent on western allopathic healthcare system due to new emerging health problem and lack of development in traditional medicine. The health profile of India in early 20th century was struggling with demographic problems like, high mortality rate, high fertility rate and low life expectancy owing to absence of health facility, knowledge about disease and socio-economic

inequality. The socio-economic inequality and lack of knowledge has given the space for orthodox system of healing called black magic by local shamans. Thus the culture of wrong practice of black magic and other similar notions developed during this period. It has also marked with many communicable diseases as epidemic havoc.

Table 1.3: Demographic Status in India

No.	Demographic Factors of health	1950-55	2000-05	2050-55
1	Crude Mortality Rate (per 1000)	26.80	8.40	10.10
2	Adult Female Mortality (per 1000 b/w 15 to 50 years)	418	100	37
3	Infant Mortality Rate (per 1000 live births)	186	60	13
4	Total Fertility Rate	5.90	3.14	1.83
5	Life Expectancy from birth	36.62	63.54	74.96

Source: <https://population.un.org/wpp/DataQuery/>

The glaring poverty, inequality and gender gap in society further play an important role towards growing development of health particularly health inequality. Insufficient public health infrastructure and minimal health allocation in India further reinforce health inequality. Globalisation and privatization process made health as a commodity for market and individual capacity to purchase with personal health spending. Reports reveal that 70 percent health spending is personal. India's public health agencies are not sufficient to cater health need owing low public health expenditure, lack of governance and health education. However, the beginning of 21st century is witness of improvement in many communicable diseases such as Polio, Leprosy, Yaws, HIV/ AIDS, Filariasis, Kala Azar and decreasing trends in Lymphatic, Malaria and others. Recent national health profile 2018 indicated the changes in communicable diseases pattern more of respiratory infections, Pneumonia, HINI, Acute Diarrheal Disease, Acute Encephalitis, Meningococcal Meningitis, Typhoid and Viral Hepatitis. Today the burden of various diseases reflected following (Table 1.4)

Table 1.4 : Burden of Disease in India (in percent)

No.	Leading causes	1990	Leading causes	2016	Mean change b/w 1990-2016	
					No. of Dalys	Daly rate
1	Diarrhoeal diseases	12.4	Ischaemic heart	8.7	104.10	33.9
2	Lower respiratory infect	9.8	COPD	4.8	36.30	-10.5*
3	Preterm birth complications	5.5	Diarrhoeal diseases	4.6	-67.70	-78.8
4	Tuberculosis	5.0	Lower respiratory infect	4.3	-61.50	-74.7
5	Measles	4.2	Stroke	3.5	52.90	0.4*
6	Ischaemic heart disease	7.0	Iron-deficiency anemia	3.5	41.80	-6.9

7	Other neonatal disorders	3.6	Preterm birth complications	3.4	-46.30	-64.8
8	COPD†	3.1	Tuberculosis	3.2	-44.50	-63.5
9	Neonatal encephalopathy	3.0	Sense organ diseases‡	2.9	85.30	21.7
10	Iron-deficiency anemia	2.1	Road injuries	2.9	65.10	8.3
11	Congenital defects	2.0	Self-harm§	2.5	29.80	-14.8*
12	Stroke	2.0	Low back & neck pain	2.3	66.10	9.0
13	Tetanus	1.8	Diabetes	2.2	174.20	80.0
14	Self-harm	1.7	Other neonatal disorders	2.1	-49.70	-67.0
15	Intestinal infectious diseases	1.6	Migraine	2.1	69.10	11.0
16	Road injuries	1.5	Skin diseases	1.9	55.00	1.7*
17	Sense organ ‡ diseases	1.3	Falls	1.8	41.30	-7.2*
18	Meningitis	1.3	Congenital defects	1.8	-20.9*	-48.1
19	Asthma	1.3	Other musculoskeletal	1.6	79.70	18.0
20	Low back & neck pain	.2	Chronic kidney disease	1.6	71.00	12.2
21	Falls	1.1	Depressive disorders	1.6	65.10	8.4
22	Protein-energy malnutrition	1.1	Neonatal encephalopathy	1.5	-56.10	-71.2
23	Skin diseases	1.1	Asthma	1.3	-15.1*	-44.3
24	Migraine diseases	1.1	Intestinal infectious	2	-37.10	-58.7
25	Malaria	1.1	HIV/AIDS	1.1	1004.60	625.0
26	Drowning	1.0	Anxiety disorders	0.9	61.90	6.2
27	Neonatal haemolytic	0.9	Meningitis	0.8	-46.70	-65.0
28	Neonatal sepsis	0.9	Rheumatic heart disease	0.8	2.5*	-32.7
29	Depressive disorders	0.9	Protein-energy malnutrition	0.7	-42.30	-62.1
30	Chronic kidney disease	0.8	Drowning	0.7	-36.00	-58.0
31	Other l musculoskeleta	0.8	Malaria	0.7		
32	Diabetes	0.7	Neonatal sepsis	0.6		
33	Rheumatic heart disease	0.7	Measles	0.4		
34	Anxiety disorders	0.5	Neonatal haemolytic	0.3		
35	HIV/AIDS	0.1	Tetanus	0.1		

Source: ICMR, PHFI and IHME (2017) India: Health of the Nation's States, The India State-Level Disease Burden Initiative, New Delhi, India.

The above details of disease in India shows the shifting trends of diseases from communicable diseases to non communicable diseases; it also reveals increasing numbers of different injuries in India. Since independence India has health programmes with disease oriented focus and it was partially successful for addressing communicable diseases and vaccination schemes. Recently two flagship health programme 'Ayushman Bharat' with 1,50,000 health and wellness centers across the country and National health protection mission (NHPM) a system of health insurance that intends to cover 500 million people. These twin initiatives called Prime minister Jan Arogya Yojna (PM-JAY) started in 2018 by subsuming multiple schemes including Rashtriya Swasthya Bima Yojana, Senior citizen health Insurance Scheme (SCHIS), Central Government Health Scheme (CGHS), Employees' State Insurance Scheme (ESIS) and others. This has followed as per the national health policy (2017) and aims to enlarge coverage area and new health problems.

In this section you studied the Indian health system both traditional and modern approach of medicine, now answer the questions given in Check Your Progress-2.

Check Your Progress 2

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

- 1) Explain the traditional Indian healing system of *Ayurveda*.

.....

.....

.....

.....

.....

- 2) How demographic changes are associated with health parameters?

.....

.....

.....

.....

.....

1.4 DETERMINANTS OF HEALTH

We saw how health and development is closely associated. On one side health influences development process, while on the other hand the level of sustainable development determines the level of health conditions of any society / region. It includes health facilities, available infrastructure and the level of health education among people. As we discussed earlier that health is not only a function of biomedical factor rather also included broad functions of socio-cultural factors. Hence, there are many factors collectively associated with health of individual

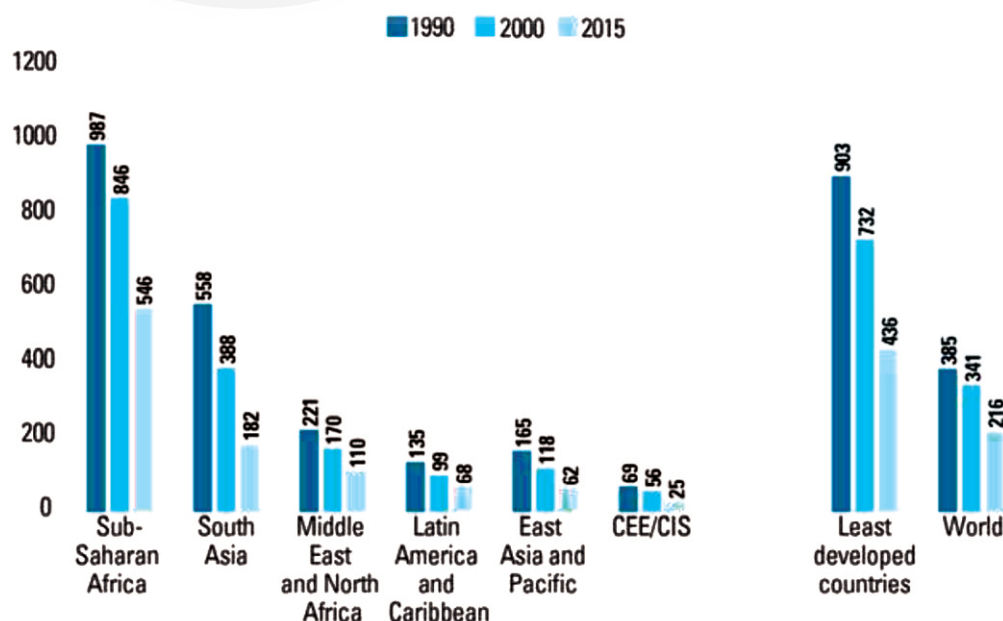
and group. Here we will discuss six important aspects of health determinants-economic factor, social factor, political factor, psychological factor, environmental factor and which determine not only health rather overall development of society.

Major Determinants of Health

	Determinant	Means	Impact on health
1	Economic	Purchasing power of health	Health became a commodity in market rather our basic need
2	Environment	Resource utilization	Air, water, land and other resources utilization not based on our need rather greed.
3	Social	Custom, faith & Behavior	Socio-cultural constructs of health-sickness, illness, disease, gender
4	Political	Health inequality	Governance- health policy, low expenditure on health, inequality in health services, prevention and traditional medicine.
5	Psychological	Psychological disorders	Increasing pace of diverse mental disorders, anxiety, depression, drugs use, violence
6	Other factors	Changed life style, food behavior and occupation	Occupational disease, life style disease, increasing trends of non communicable diseases

1.4.1 Economic Factor

Income and wealth is the base of economic status of any household for individual and country. This economic status decides any individual or collectively the purchasing power of health services. Economic status makes you enable for basic needs- food, shelter, house, health services and education. Last two added later on but very important needs, which depends on the potential's of purchasing power. Countries are having high income have higher purchasing power also having better health facility like USA, South Korea and European countries,



Source: World Health Organisation,

Whereas low income countries having poor health indicators such as Sierra Leone, Kenya and other regions of underdeveloped countries. Poverty is one significant cause and consequences of ill health. This is a most prominent and most visible determinant for health care as Kofi Annan, Secretary General of United Nations says 'the biggest enemy of health care in developing world is poverty'. Poverty creates the condition of poor health owing to lack of clean water, inadequate sanitation, lack of shelter and environmental reasons. Millennium Development Goals has major thrust on health.

1.4.2 Social Factor

Society and culture play a significant role towards the construction of health conditions and behavior. It has observed that often health program and its planning had failed in absence social factors. It is well aware a fact that each society has its own belief and behavior for human health whether normal and abnormal health behaviour. Social factors make explicit the distinction between disease and sickness, disease is biomedical approach whereas sickness determined by the community behavior or social perception about health problem. Biomedical concept of diseases not always legitimized and accepted by local culture and society. Some communicable disease earlier considered as normal health condition by society and culture like, Ascariasis in many parts of Africa; Schistosomiasis in Egypt. Religion has strong hold in society, the concept of health also guided by these considerations viewed as god's act as faith and magic in society like, smallpox and chickenpox visualized as curse of god.

American sociologist Talcott Parsons (1948) identified the sick role concept to define social behavior of health. These social behaviors not only identify normal and abnormal health condition but also its symptoms, treatment and socio-cultural conditions of sick individual. Accordingly sick person has given a role and status in family, community and society. It is not uniform all culture rather may differ one society to other society. Therefore culture, custom and belief of any society plays important role to construct individual's notion of health and illness. Gender is another important concern of social behavior of health. It is a social construction not a biological construct about female, which determines their role and status in society. Gender gap is very common problem widely prevalent in many regions. If society has gender hierarchy behavior it will also reflect in their health perception and its treatment process.

1.4.3 Psychological Factor

The changing social network and social structure led to depression, anxiety and psychological disorders. Agrarian based society had joint family system joint and collective emotional sharing, while the influence of industrialization and urbanization changed nuclear family system and loosen emotion support. Isolation led to various forms of mental problem and neuropsychiatric disorders-schizophrenia, epilepsy, substance abuse, multiple sclerosis, cerebral palsy, dementia, migraines, bipolar disorder and other mental retardation. It is very surprising that developed countries are suffering more than developing countries and underdeveloped countries with this health disorder. According to WHO America has higher prevalence of psychological disorders, Schizophrenia prevalence is highest in Japan (see Table-1.5).

Table 1.5: Global prevalence of psychological disorders

Disorder	Share of global population with disorder (2016) [Difference across countries]	Number of people with the disorder (2016)	Share of males: females with disorder (2016)
Any mental or substance use disorder	15.5% [13-22%]	1.1 billion	16% males 15% females
Depression	4% [2-6%]	268 million	3% males 4.5% females
Anxiety disorders	4% [2.5-6.5%]	275 million	3% males 4.7% females
Bipolar disorder	0.6% [0.4-1.5%]	40 million	0.55% males 0.65% females
Eating disorders (clinical anorexia & bulimia)	0.14% [0.05-0.55%]	10.5 million	0.07% males 0.2% females
Schizophrenia	0.3% [0.2-0.45%]	21 million	0.29% males 0.28% females
Alcohol use disorder	1.4% [0.5-5%]	100 million	1.9% males 0.8% females
Drug use disorder (excluding alcohol)	0.9% [0.4-3.3%]	62 million	1.1% males 0.5% females

Source: Global Burden of Disease, 2016 adapted from Our World in India data.

The World Health Organization is currently undertaking a global survey of 26 countries in all regions of the world, based on ICD and DSM criteria. It has observed that anxiety disorders and mood disorders are the most common in most of countries, while substance disorders and impulse-control disorders were consistently less prevalent but increasing threats. Further it revealed that the United States, Colombia, the Netherlands and Ukraine tended to have higher prevalence estimates across most classes of disorder, while Nigeria, Shanghai and Italy were consistently low, and the prevalence was lower in Asian countries in general. WHO also found that obsessive-compulsive disorder is two to three times as common in Latin America, Africa, and Europe as in Asia and Oceania region, similarly bipolar disorder and panic disorder have very similar rates around the world. However, these are widely believed to be underestimates, due to poor diagnosis (especially in countries without affordable access to mental health services and low reporting rates, in part because of the predominant use of self-report data. All above mentioned health problem lead to the increasing trends of suicide, violence and other problem due to psychological factor.

1.4.4 Political Factor

It has been observed that political decisions, policies and practices of health services have created health inequality across the world and within countries. Here, health became a commodity in open market which is available as per individual's purchasing power. Power asymmetry and unequal economic distribution worldwide viewed the causes of health inequality. Thus, Political

factor deals this global / national governance and its impact on health inequality, which is a product of poor governance, increasing illegal migration, and glaring socio-economic inequality. It also raises a basic contradiction between political commitment to provide health services for all and its ineffective role towards public health services. Present global health governance allows more than two systems of health services - government agencies, private agencies and civil society health institution and others provide various health services without proper inter-sectoral coordination. Thus power and socio-economic inequality further perpetuated health services, its policy along with other basic needs. However, changing global power of governance with emerging economies of BRICS (Brazil, Russia, India, China, and South Africa) and MIKT (Mexico, Indonesia, South Korea, and Turkey) asserting their interest at UN bodies and other international arenas for climate, trade, security and health issues. This acted as pressure group for these global concern and international agencies should play an active role towards common problem.

World Health Organization (WHO) reveals that a sizeable proportion is still not getting basic minimum health needs in less developed region. Poor governance and poverty considered major bottleneck of these low developed region. As we discussed earlier that good income and wealth plays major role to purchase health services and developed countries spending are spending higher share of GDP to health both individual and government, whereas less developed country's health spending is very less including India. Globally it has observed that more participation of civil society and marginalized groups in decision making process. Besides this, transparency in governance, health institutional flexibility, effective health policy, international institutions for norms and guidelines can to protect and promote health. Health should be considered common global need irrespective of economic inequality, political system as global commitment by global community.

1.4.5 Environmental Factor

Our ancient civilizations developed near river and other supportive physical conditions were available. Early text reveals the knowledge of environment and its importance for survival and health. Indus valley civilization traverses through Vedas. A Greek physician Hippocrates (around 400 BC), mentioned environmental dietary, behavioral and other aspects of health. Even today doctor take oath by his name called 'Hippocrates Oath'. Keeping the significance of environment it has worshiped and considered as god.

Environment refers the surrounding of human and earth which includes fauna, flora, air, water, land. Besides this physical component social components also considered the part of environment. Any change in these components of ecology directly affects the other components. With technological development these balances interfered or disturbed the equilibrium of ecosystem leading to many health problems particularly non communicable diseases. The changes life further added life style diseases. Modern environmental health expert see the impact of human on environment and vice versa. They also examine the changes in air quality, water quality, food protection, solid waste management, radiation protection, noise protection, housing and its impact on organism. The emerging changes in organism and genetic changes have observed which need to understand and explore on future implication.

Health scientist always given thrust to cleanliness as important as worship. However, It has least cared in health education, government programmes and health policies to execution. This is also one significant component for health and environment. Open defecation, clean potable water, solid waste management, liquid waste management, industrial pollutants, effective sewage are could not overcome many regions of the world. These are basic conditions which can settle with least resources, effective governance and people's participation. We can easily overcome this initial cleanliness behavior and address ongoing threat of communicable diseases and seasonal viral diseases like dengue, chikungunya, malaria.

1.4.6 Other Factors

Besides above factors, there are some other factors like changing livelihood condition, food habit and change in occupation led to livelihood disease and occupational threats. These are enhanced with advancement of technology, industrialization, migration, urbanization and recent internet revolution. All these changes made human being less physically active and changed life style which has led to emerging life style diseases like cardiovascular disorder, sense organ disease and other health problems. Changing food habit from grain intake towards process food, items of heavy carbohydrates and unsaturated food behavior reduced fresh and traditional healthy food habit. Studies reveal that grain intake of human being is in decreasing trends owing to increasing processed food intake. The habit drugs abuse, smoking, drinking play key role in life style health problems. Similarly, occupation hazards are also increasing due to lack of safety measures at work place and increasing work pressure. The change in occupation, mobility, stress and other factors induced occupational disease.

In this section you studied the various factors of health which determines major role to health, now answer the questions given in Check Your Progress-3.

Check Your Progress 3

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) How health and poverty are linked?

.....

.....

.....

.....

.....

2) Does environment has any role to health?

.....

.....

.....

.....

.....

1.5 LET US SUM UP

In this unit we saw the intricacy of health concept how associated with development as well as the components of development also influenced by health parameters of any region. A country's healthy population can not only contribute economic growth and production process but also support to society and family. Contrary to this unhealthy individual became liability to family and society and becomes only consumer in the economy not play any role in production process. Thus the concept of health and development are linked. We also saw the changes in morbidity and mortality figures from communicable diseases to gradual shift in chronic non-communicable diseases like, cardiovascular disease (CVD), diabetes, chronic obstructive pulmonary disease (COPD), cancer and different forms of psychological disorders emerging more severe and a challenge in upcoming health and development process. Indian health situation is more or less following this process. It has reported that 61 percent of deaths are due to non-communicable disease whereas risk of premature death from about 23 percent.

Secondly, socio-economic status and health are directly or indirectly correlated. Here socioeconomic status refers to income, social status, educational attainment and other determinants of socio-economic status and ability to access health care services. Low in these indicators often tends to have significantly reduced health status and availability health care services. The health conditions in developed countries are better than underdeveloped countries owing to these reasons. There are many other factors influences the health status and countries abilities to provide quality health services. The changed food habit and life style leading to another challenge health. Now, the intake of processed food or unhealthy food, alcohol, drug abuse, smoking and changed life style not reduced conventional food intake but less physical activity emerging as threat to life style health disorder like heart disease, stroke, obesity, respiratory problems, cardiovascular problem and diabetes.

1.6 KEYWORDS

Disability Adjusted Life Years (DALYs): It is a metrics to measure disability/ burden of disease by lost potential years. It is compared with average life expectancy and potential years of life lost by virtue of poor health or disability. Since 1990s it became popular in health impact assessment.

$DALY = YLD \text{ (Years Lived with Disability/ Disease)} + YLL \text{ (Years of Life Lost)}$

Occupational health: It deals with various aspects of health and safety in the workplace. WHO considered following disease as occupational like, cancers, accidents, musculoskeletal diseases, respiratory diseases, hearing loss, circulatory diseases, stress related disorders and communicable diseases and others. it is responsibility of owner to reduce worker's risk factors at the workplace by prevention of these hazards.

Lifestyle disease: Those diseases emerge owing to changed life style. Increasing trends of alcohol, drug abuse, smoking abuse and unhealthy eating as well as lack of physical activity coming various health disorders called lifestyle disease.

1.7 REFERENCES AND SELECTED READINGS

- 1) Michael H. Merson, Robert E. Black and Anne J. Mills (2006) International Public Health Diseases, Programs, Systems and Policies, Jones and Bartlett publishers, Massachusetts, USA.
- 2) Madhu Nagla (2014) (eds.), Sociology of Health, Readings in Indian Sociology: Sociology of Health, Volume- IV, Sage Publications, New Delhi.
- 3) Pradeep Kumar and Niti Agrawal (2018) Learning Disabled and Their Education in India, *Human Arenas*, vol. 2, issue 2, page- 228-244, Springer Nature, Switzerland.

1.8 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress 1

- 1) Define the concept of health?

Health was often viewed as absence of disease, it has confined within biomedical paradigm and excluded individual beliefs and behavioral aspects like, excluded illness, physical disorders, and undiagnosed health problems. WHO defined health as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity?

- 2) Discuss the relationship between health and development.

The concept of health and development are closely associated since early human history. The condition of health and development indicators has been drastically changed human life, its survival, health infrastructure and services. Healthy population resulted in better economic growth worldwide. Improvement in average life expectancy also improved development parameters.

Check Your Progress 2

- 1) Explain the traditional Indian healing system of *Ayurveda*.

Ayurveda is well known system of traditional Indian medicine continued even today. Charak (physician), Sushruta (surgeon) Atreya and Jivak are well known contributors to this knowledge of traditional Indian health system. This Ayurveda system describes ancient theories on human body, etiology, symptomology and therapeutics for a wide range of diseases. It also includes sections on the importance of diet, hygiene, prevention, medical education, the teamwork of a physician, nurse and patient necessary for recovery to health.

- 2) How demographic changes are associated with health parameters?

Demographic indicators are also the indicate the health status and level of development of any region or country. India in early 20th century was struggling with demographic problems like, high mortality rate, high fertility rate and low life expectancy owing to absence of health facility, knowledge about disease and socio-economic conditions which led to health inequality.

- 1) How health and poverty are linked?

Poverty is one significant cause and consequences of ill health. This is a most prominent and most visible determinant for health care both preventive and promotive. Poverty creates the condition of poor health owing to lack of nutrition, clean water, inadequate sanitation, lack of shelter and environmental reasons. Thus UN through MDGs and SDGs has given major thrust on poor countries.

- 2) Does environment has any role to health?

Environment refers the surrounding of human and earth which includes fauna, flora, air, water, land. Besides this physical component social components also considered the part of environment. Any change in these components of ecology directly affects the other components. Health expert see the impact of human on environment and vice versa. They finds the changes in air quality, water quality, food protection, solid waste management, radiation protection, noise protection, housing and its impact on organism.



ignou
THE PEOPLE'S
UNIVERSITY

UNIT 2 DEMOGRAPHIC INDICATORS: TRANSITION AND CHALLENGES

Structure

- 2.1 Introduction
- 2.2 Demography: Meaning and Components
- 2.3 Demographic Measures
- 2.4 Fertility: Meaning and Measures
- 2.5 Mortality and Its Measures
- 2.6 Age and Sex Structure
- 2.7 Demographic Challenges
- 2.8 Let Us Sum Up
- 2.9 References and Selected Readings
- 2.10 Check Your Progress-Possible Answers

2.1 INTRODUCTION

Health care in India consists of a universal health care system. Although it has grown enormously during the last six decades, even now, the vast majority of the country suffers from a poor standard of healthcare infrastructure which has not kept up with the growing economy. Despite having centres of excellence in healthcare delivery, these facilities are limited and are inadequate in meeting the current healthcare demands. Why it is so? One of the most critical factors that affect the health care is the demographic situation which reflects various characteristics of population and is a significant aspect of human development. The demographic situation in India has been in a constant state of transition and it is this transition that decides not only the quality of population, but its contribution to various aspects of development including the health care, too. Wherever the transition is towards a positive direction, the contribution to development is smooth, otherwise it confronts challenges. The state of the demographic situation is measured through significant demographic indicators, such as fertility rates, mortality rates, and migration. This unit discusses the transition in demographic indicators, and the challenges that are to be responded adequately and appropriately. To understand these in a better way, the unit will also explain the meaning of demography and related issues and concerns.

After reading this unit, you should be able to

- a) explain the meaning of demography and various demographic measures
- b) calculate various measures of fertility and mortality
- c) narrate the challenges of demographic transition

2.2 DEMOGRAPHY – MEANING AND COMPONENTS

Demography is a broad social science discipline. The word ‘demography’ comes from the Greek word ‘*demos*’, which means population and ‘*graphy*’, which

means to describe or draw. In its most simplistic terms, demography is the study of how human population changes. Various data is collected and then analyzed to see how populations have changed over a period of time, and to predict how they will act in the future. These changes occur due to births, deaths, immigration, emigration, and natural ageing. More specifically, however, demographers deal with the collection, presentation and analysis of data relating to the basic life-cycle events and the experiences of people: birth, marriage, divorce, household and family formation, employment, ageing, migration, and death. The discipline emphasizes empirical investigation of population processes, including the conceptualization and measurement of these processes, and the study of their determinants and consequences.

Demography also deals with the study of social and economic change, and how changes in demography affect the environment. Concepts such as life tables, population momentum and stable populations, have allowed society to better understand social change. As an offshoot, demography has encouraged vast amounts of literature on topics such as: health and morbidity, family systems, women's roles in society, and the cultural context of changes in demography. To be precise, demography is the study of the growth, change, and structure of the human population. Changes in a population's size and structure are caused by changes in the birth rate, the death rate, and the net migration rates.

2.3 DEMOGRAPHIC MEASURES

Let us first understand the demographic measures. The three popular measures used in demographic indicators are:

- 1) Ratio
- 2) Proportion
- 3) Rate

2.3.1 Ratio

Ratio is simply, any number divided by any other number multiplied by another number. For example the sex ratio is the number of females per thousand males. That is

$$\text{Sex Ratio} = \frac{\text{Females}}{\text{Males}} \times 1000$$

For example, out of the total population of 2000 in Kartarpur Village, there are 1100 males and 900 females then the sex ratio is:

$$\text{Sex Ratio} = \frac{900}{1100} \times 1000$$

2.3.2 Proportion

A proportion is a ratio in which the number of the numerator is included in the denominator. The formula used for the calculation of proportion is as follows:

$$\text{Proportion} = \frac{x}{x+y}$$

If someone has to calculate the proportion of female population in the Kartarpur Village to the male population then it is:

$$\text{Proportion} = \frac{900}{900 + 1100} = .45$$

Note that a proportion could vary between 0.00 to 1.0. The proportion is converted into a percentage by multiplying by 100.

2.3.3 Rate

The term ‘rate’ is the most frequently and loosely used term in demography. In ‘rate’, the numerator is the number of events, such as births or deaths, occurring during a period of time; and the denominator is the number of population during the period under consideration. In this context, it is important sometimes to specify the period.

For example, if the total population of a village is 2500 and 25 births have occurred in a particular year say in 2007, then the birth rate is:

$$\text{Birth Rate} = \frac{\text{No. of Birth (in particular period)}}{\text{Total Population}} \times 1000 = \frac{25}{2500} \times 1000 = 10$$

It is pertinent to mention here that rates are commonly used in demography, but in actual terms they are ratios or proportions. For example the Literacy Rate is the proportion of the population that is literate.

In this section, you studied demography, its meaning, and components, and demographic measures. Now, answer the question given in Check Your Progress 1.

Check Your Progress 1

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) What do you mean by demography?

.....

.....

.....

.....

.....

2) Define Proportion.

.....

.....

.....

.....

.....

2.4 FERTILITY: MEANING AND MEASURES

Fertility is one of the major components of demographic situation and is connected with human child bearing or reproduction. Sometimes, the term 'natality' is used in place of fertility. Commonly, the term refers to occurrences of births, or, more particularly, live births. In order to understand the implications of fertility, let us understand indicators like Growth Rate, Crude Birth Rate, General Fertility Rate, Age Specific Fertility Rate, Total Fertility Rate, Gross Reproduction Rate, and Net Reproduction Rate.

2.4.1 Growth Rate

The growth rate indicates the pace of the growth of population. The rapid growth of population in developing countries, as compared with developed countries, is causing problems that are not only quantitative but qualitative, too. The implications of population growth on the quality of life of the people are of critical importance. The future growth of population in developing countries will have further repercussion on their education, health, employment, housing, and other aspects of life. Even the negative population growth as experienced in certain European countries has an adverse impact on the process of development and the quality of life of the people in those countries. The demographic situation, whether it is population growth or its decline, is determined by births, deaths, and migration. It is with this understanding that the calculation of population growth is done so that the country can take appropriate measures for controlling the population growth.

Before calculating the growth rate, it is essential to know the fundamental demographic relationships that are represented by the following symbols:

$$P_{t+1} = P_t + B - D + IN(M) - OUT(M)$$

$$P_t = \text{Population of an area at a particular time or period}$$

$$P_{t+1} = \text{Population at a time } t \text{ plus the number of births between } t \text{ and } t+1$$

$$B = \text{The number of births}$$

$$D = \text{The number of deaths}$$

$$IN(M) = \text{The number of in migrants leaving in the area.}$$

$$OUT(M) = \text{The number of people out migrants in the area.}$$

$$MYP = \text{Mid Year Population}$$

The 'natural increase' is the difference between numbers of births and deaths.

$$\text{Natural Increase} = B - D$$

'Net Migration' is the difference between the numbers of migrants in and out.

$$\text{Net Migration} = IN(M) - OUT(M)$$

Thus, the population change is the summation of 'natural increase' and 'net migration'.

$$\text{Population Change} = \text{Natural Increase} + \text{Net Migration}$$

The rate of population change is derived by dividing each element by the mid-year population (MYP).

$$\text{The Rate of Population Change} = \frac{P_{t+1} - P_t}{MYP} = \frac{B}{MYP} - \frac{D}{MYP} + \frac{IN(M)}{MYP} - \frac{OUT(M)}{MYP}$$

Thus, the difference between the Birth Rate and Death Rate is the Rate of Natural Increase and the difference between the IN-Migration and OUT-Migration is Net Migration Rate. So the Growth Rate can be written as: Growth Rate = Rate of Natural Increase + Net Migration Rate.

The growth rate calculated as above indicates the demographic situation of the concerned geographical unit: district, state, country, region and the world. The growth rates during 2000-2017 in various regions of the world are shown in the (Table – 2.1)

Table 2.1: Average Annual Growth Rate of Population by Regions (in percent)

Region	2000-2017
East Asia & Pacific	0.7
Europe & Central Asia	0.4
Latin America and Caribbean	1.2
Middle East and North Africa	2.0
South Asia	1.5
Sub-Saharan Africa	2.7
High Income Region	0.7
Low Income Region	2.7
World	1.2

Source: World Development Indicators, 2018

2.4.2 Crude Birth Rate (CBR)

The Crude Birth Rate is the number of live births occurring among the population of a given geographical area during a given year, per 1,000 mid-year total population of the given geographical area during the same year. The reason it is a 'crude' rate is because it includes all ages and both sexes in the denominator. The equation is:

$$CBR = \frac{\text{Birth in a year}}{\text{Population at mid-year}} \times 1000$$

For example, if the mid-year population of an area is 70,000 and the number of live births are 900, then:

$$CBR = \frac{900}{70000} \times 1000 = 12.85$$

The Crude Birth Rate (CBR) is a decisive indicator of the demographic situation of any geographical area. Various population control measures, particularly, the provision of family planning services, has helped India to control its birth rate.

Kerala has the lowest birth rate in the country. However, the birth rate in states like Bihar, Uttar Pradesh, Madhya Pradesh, and Rajasthan continues to remain high compared with other states.

2.4.3 General Fertility Rate (GFR)

This is the ratio of the total number of live births (B) during a calendar year in a given geographical area to the total number of women (mid-year population) of child bearing ages (15-49 years) in that area. The equation is:

$$\text{GFR} = \frac{\text{Birth during year}}{\text{Women 15-49 at mid year}} \times 1000$$

For example, in a particular village, the number of births during a year is 25, and the number of women in the age-group 15-49 years is 1200, then the GFR is

$$\text{GFR} = \frac{25}{1200} \times 1000 = 20.83$$

2.4.4 Age Specific Fertility Rate

The Age Specific Fertility Rate (ASFR) is the number of live births per women of a specific age-group (usually 5- year age groups from 15-19 to either 15-44, or 45-49 years) of the population of a given geographical area during a given year. The equation is:

$$\text{ASFR} = \frac{B_F}{P_F} \times 1000$$

B_F = Number of live births to women of a specific age group

P_F = Mid-Year women population in the same age group

For example, if the number of live births to women in the age group 20-24 is 225, and the number of women in this age group is 1300 then

$$\text{ASFR} = \frac{225}{1300} \times 1000 = 173.07$$

The ASFR is usually given for five year age-group. In other words, the magnitude of age is five.

The AFSR of different age-group of women is given in the table below.

Age-group	No. of Birth	No. of women	AASFR
15-19	20	100	20.0
20-24	80	200	400.0
25-29	90	220	409.1
30-34	85	210	404.8
35-39	75	190	394.7
40-44	50	170	294.1
45-49	5	150	33.3
		Total	1956.0

2.4.5 Total Fertility Rate

Total fertility rate (TFR) is defined as the sum of age specific fertility rates of women by single year of age from 15 to 44 years (or 15 to 49 years) and is expressed per woman. It is directly calculated as the sum of age-specific fertility rates (usually referring to women aged 15 to 49 years), or five times the sum if data are given in five-year age groups. The formula is:

$$\text{TFR} = \frac{\text{Sum of age specific fertility rate}}{1000} \times \text{magnitude of age group}$$

For example,

$$\text{TFR} = \frac{1965 \times 5}{1000} = 9.82$$

Here, the magnitude of age group is 5. The TFR also indicates the demographic situation.

2.4.6 Gross Reproduction Rate

The Gross Reproduction Rate (GRR) is related to female births. It is the number of girls that are expected to be born to 1000 females passing through their child bearing years. The equation is

$$\text{GRR} = \frac{\text{No of female birth}}{\text{Total number of birth}} \times \text{TFR}$$

If the number of live births in a year is 25 out of which female birth are 13 and the TFR is 5.6 then

$$\text{GRR} = \frac{13}{25} \times 5.6 = 2.91$$

This measure of fertility is based on the following assumptions:

- a) The age specific birth rates are constant for a given year
- b) No women dies during the child bearing age; and
- c) All girls survive

2.4.7 Net Reproduction Rate (NRR)

The average number of daughters that would be born to a woman (or a group of women) if she passed through her lifetime conforming to the age-specific fertility and mortality rates of a given year. This rate is similar to the gross reproduction rate, but takes into account that some women will die before completing their childbearing years. An NRR 1 means that each generation of mothers has exactly enough daughters to replace themselves in the population. The equation is:

$$\text{NRR} = \frac{\text{No. of female expected to be born to 1000 newly born girls}}{1000}$$

For example, if 1200 female give birth to 1 girl each, then 1200 girls are born, and if these girls live till fertility then the

$$\text{NRR} = \frac{1200}{1200} = 1$$

These are various measures of fertility. Let us now discuss various factors affecting fertility.

2.4.8 Factors Affecting Fertility

- 1) **Biological Factors:** The biological factors, such as age and sex affect fertility. The age of the onset of menstruation among girls and menopause among women are the biological limits to fertility. The food habit among the people of certain area result in early onset of puberty among girls. Once the girls start menstruating the possibility of their becoming mothers begins. Their early exposure to sex and marriage contributes to higher fertility.
- 2) **Physiological Factors:** Physiological factors such as impotency among males and sterility among women affect the fertility. Fertility is also affected by abortion and still births. The abortion of the first pregnancy can result in infertility among women. Nowadays, the drug habits among the younger generation are leading to infertility.
- 3) **Religion:** Religion affects fertility in many societies. The birth of a son and marriage of a daughter are considered as social and cultural obligation. This leads to early marriage and increasing numbers of births until at least one son is born. The practice of polygamy, as in the case of Muslims, naturally, increases fertility. This not only enhances fertility but also affect the education and health status of women in that society.
- 4) **Education:** Education plays an important role in influencing fertility. In countries where the percentage of literates is high, fertility is low and vice versa. Kerala, which has high literacy rate, has a lower fertility rate among women in the country. Among the South Asian countries, Sri Lanka, with a high literacy rate has lower fertility compared to other countries, like Bangladesh, Pakistan, India, and Nepal.
- 5) **Status of Women:** Fertility is also influenced by the status of women in a society. It is found that fertility is low among women those who are educated and are in the jobs, compared to their counterparts who are illiterates and unemployed.
- 6) **Family Planning:** An important factor affecting fertility is family planning. Developed countries have been able to bring down their fertility rate by voluntarily adopting family planning measures. There is a direct relationship between the rate of adoption of family planning services and the rate of fertility.

There are also many other factors, such as the caste system, racial groups, customs, urbanization, and economic condition of families affect fertility. In this section you studied about fertility, its meaning and measures, indicators like Growth Rate, Crude Birth Rate, General Fertility Rate, Age Specific Fertility Rate, Total Fertility Rate, Gross Reproduction Rate, and Net Reproduction Rate. Now, answer the questions in Check Your Progress 2.

Check Your Progress 2

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) What do you mean by CBR? Write the formula for calculation of CBR?

.....

.....

.....

.....

.....

.....

.....

2) Do biological factors affect fertility?

.....

.....

.....

.....

.....

.....

.....

2.5 MORTALITY AND ITS MEASURES

Mortality means death. The UN principles of Vital Statistical System, 1950 defined death as the permanent disappearance of all evidence of life at any time after birth has taken place. Death does not include abortion and still birth. The various methods of measuring mortality rate are discussed as under.

2.5.1 Crude Death Rate(CDR)

The crude death rate (CDR) is the ratio between the number of deaths in a population during a given year and the total mid-year population for the same year, usually multiplied by 1,000 for a given country, territory, or geographic area. The formula is:

$$\text{CDR} = \frac{\text{Deaths in a year}}{\text{Population at mid-year}} \times 1000$$

For example, if the total mid-year population of an area is 40,000 and numbers of deaths are 400, then:

$$\text{CDR} = \frac{400}{40000} \times 1000 = 10$$

Table 2.2: CDR of Different Regions of the World, 2016

Region	CDR
East Asia & Pacific	7
Europe & Central Asia	10
Latin America and Caribbean	6
Middle East and North Africa	5
South Asia	7
Sub-Saharan Africa	9
High Income Region	9
Low Income Region	8
World	8

Source: *World Development Indicators*, 2018

The death rate has declined over the decades. Various factors, like the increasing level of literacy, urbanization, eradication of epidemics, besides the improved provision of healthcare facilities in urban, as well as rural areas in India, have resulted in decline of death rates over a period of time.

2.5.2 Infant Mortality Rate

A child in the age-group of 0-1 is called an infant. According to Barclay, “infants are defined in demography as an exact age group namely age ‘zero’, or, those children in the first year of life, who have not yet reached age one”. The Infant Mortality Rate (IMR) indicates the number of deaths of children below one year of age per thousand live births in a given year. The formula for infant mortality rate is:

$$IMR = \frac{D_1}{B} \times 1000$$

D_1 = Number of deaths among infants registered during the year

B = Number of live births in the same year

For example, if the number of live births in a specified year in an area is 15000, and the number of registered deaths of infants in a year is 500, then, the infant mortality rate is calculated in the following manner:

$$IMR = \frac{500}{15000} \times 1000 = 33.34$$

2.5.3 Neo-natal Mortality Rate

This is the number of infant deaths under 28 days of age in a given year, per 1,000 live births in that year. Deaths occurring during the first year of life are usually concentrated in the first week or month. Considering this, the IMR can be broken into the following three parts:

- i) Early Neonatal Mortality Rate

- ii) Late Neonatal Mortality Rate
- iii) Post-Neonatal Mortality Rate
- iv) Prenatal Mortality Rate

The equation used for these rates are as follows:

$$\text{Early Neonatal MR} = \frac{\text{Death under 1 week}}{\text{No. of live births}} \times 1000$$

$$\text{Late Neonatal MR} = \frac{\text{Death 1-4 weeks}}{\text{No. of live births}} \times 1000$$

$$\text{Post-neonatal MR} = \frac{\text{Death 4-52 week}}{\text{No. of live births}} \times 1000$$

$$\text{Pre-natal MR} = \frac{\text{Still births+ deaths in first week of life}}{\text{No. of live births}} \times 1000$$

2.5.4 Child Mortality Rate

Child Mortality Rate or under -5 mortality rate is the number of children who die by the age of five per thousand live birth. The equation is

$$\text{CDR} = \frac{D_5}{B}$$

D = the number of children who die by the age of five

B = is the number of live birth by the age of five

2.5.5 Age- Specific Death Rate (ASDR)

Age- Specific Death Rate (ASDR) is calculated as the number of deaths in a particular age group to the mid-year population of the age group. The equation is:

$$\text{ASDR} = \frac{D_A}{P_A} \times 1000$$

D_A = number of deaths in a particular age-group

P_A = Mid-year population of the age-group

2.5.6 Cause Specific Death Rate (CSDR)

Deaths may be caused by malaria, AIDS, typhoid, accident, or any other disease or reason. Such cause specific deaths can be calculated with the following formula:

$$\text{CSDR} = \frac{D_C}{D} \times 1000$$

D_C = Number of deaths due to a particular cause in a year

D = Total number of mid-year deaths

2.5.7 Maternal Mortality Rate (MMR)

Maternal Mortality Rate (MMR) is the number of women who die as a result of pregnancy and childbirth complications per 100,000 live births in a given year. The equation is:

$$\text{MMR} = \frac{M_D}{B_L} \times 100000$$

M_D = Number of maternal deaths relating to child bearing

B_L = Number of live birth

Table 2.3: Maternal Mortality Rate and Infant Mortality Rate of Selected Countries, 2015

	MMR calculated per 100000 live birth (2015)	IMR calculated per thousand live birth(2015)
Bangladesh	176	31
Botswana	129	35
China	27	9
Ethiopia	353	41
Germany	6	3
Japan	5	2
India	174	38
Sri Lanka	30	8
UK	9	4
USA	14	6

Source: *World Development Indicator*, World Bank, 2015, Note- Figures in parenthesis show year

2.5.8 Factors Affecting Mortality

Mortality or death is affected by factors such as biological, physiological, environmental, and others. In its manual on the International Statistical Classification of Causes of Death, the World Health Organization (WHO) has classified deaths under the following categories:

- Infectious, parasitic, and respiratory disease
- Cancer
- Diseases of the circulatory system
- Violence and accidents
- All other causes, such as diseases of the digestive system.

In the past, the mortality rate was high because of food shortages and famines, spread of epidemics, insanitary conditions, and, long and recurrent wars. However, with rapid advancements in medical sciences, many diseases have been controlled, and a few have also been eradicated.

A few factors those have enabled the developing countries to control mortality are given below.

- i) Availability of disease control medicines and help from bilateral organizations like the WHO, UNICEF, UNFPA have enabled developing and poor nations to control diseases and deaths.
- ii) Many public health programmes, such as the National Tuberculosis Control Programme, the National Malaria Eradication Programme, and the Maternal and Child Health Programme have been launched with the help of international organizations in many countries. These programmes have helped developing nations to control diseases.
- iii) The governments of many countries have taken adequate steps for the provision of sanitation and safe drinking water to its people. This has also helped to control the diseases and deaths relating to sanitation and water.
- iv) With the spread of education in general and health education in particular, people are becoming health conscious. Moreover, advertisement of health messages in TV and radio has promoted education among people. All these have brought down death rates.
- v) The status of women in society has been improving. It is the women who take care of the health of their children and family. As women's education is scaling up day by day, it has helped to reduce the death rate.
- vi) After the advent of the Primary Health Care System from 1977, a number of primary health care institutions, such as Community Health Centres (CHCs), Primary Health Centres (PHCs), and health sub-centres have been opened in rural and far flung areas. These institutions, manned with trained manpower, personnel, equipment and medicines are being able to control morbidity and mortality to a great extent.
- vii) Civil society organizations such as youth clubs, Mahila Mandals, Panchayati Raj Institutions, and NGOs play an important role in health care delivery system. The role of civil society organizations in Tamil Nadu is widely recognized as an instrument for controlling both fertility and mortality in that state. Therefore, the role of non-state actors has been recognized as a crucial factor for controlling mortality.

In this section you studied about mortality and its measures, crude death rate, infant mortality rate, neo-natal mortality rate, cause specific death rate, maternal mortality rate, age- specific death rate. Now, answer the questions in Check Your Progress 3.

Check Your Progress 3

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) What do you mean by IMR?

.....

.....

.....

.....

.....

2) What is MMR?

.....

.....

.....

.....

.....

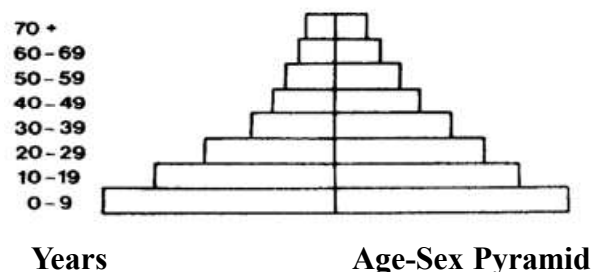
2.6 AGE AND SEX STRUCTURE

The age and sex composition of population at any single point in time is crucial for understanding the dynamics of population change. Age and sex distributions are described by using population pyramids, the sex-ratio and dependency ratios.

2.6.1 Population Pyramid

Population pyramids are an elegant and useful way of graphically presenting an age-sex distribution. As shown in the illustration below, a pyramid essentially comprises two ordinary histograms placed on their sides and back to back. Some of the features of the Age-Sex pyramid are:

- 1) Pyramids are always drawn showing the male population on the left hand side and the female population on the right hand side.
- 2) The young are always at the bottom and the old at the top.
- 3) Customarily either single-year or five-year age groups are used. However, other age groupings are possible.
- 4) The last open-ended age-group is normally omitted entirely from the pyramid because it is impossible to draw it truthfully.
- 5) The bottom scale can be graduated as either absolute numbers or percentages. The shape of the pyramid is not affected at all. However it is essential that the percentages are calculated using as a base, the total population of both sexes combined. If the percentages are calculated separately for males and females, then the pyramid will present a false picture.



2.6.2 The Sex Ratio

The sex-ratio is simply the ratio of males to females in the population. It is normally expressed as the number of males per 1000 females.

$$\text{Sex Ratio} = \frac{\text{Males}}{\text{Females}} \times 1000$$

The sex ratio in India has been declining since 1901, though it indicated some improvement in 2001 (Table –2.4). In urban areas sex ratio is lower as compared to rural area. The third feature of sex-ratio is that it is lower in northern Indian States of Punjab and Haryana, particularly sex-ratio in the age group of 0-6 year as compared to southern Indian States of Kerala and Tamil Nadu.

Table-2.4: Change in Sex Ratio of Indian Population (1901-2011)

Year	Rural	Urban	Total
1901	979	910	972
1911	975	872	964
1921	970	846	955
1931	966	838	950
1941	965	831	945
1951	965	860	946
1961	963	845	941
1971	949	858	930
1981	951	879	934
1991	938	894	927
2001	946	900	933
2011	940	947	926

Source: Census of India (various years) Registrar General of India, New Delhi

2.6.3 Dependency Ratio

Dependency ratio is another important measure of the age distribution of population. It describes the number of dependent persons that are supported by the active or working members of the population. It is the ratio of the economically dependent part of the population to the productive part; arbitrarily defined as the ratio of the elderly (ages 65 and older) plus the young (under age 15) to the population in the working ages (ages 15-64).

The Total Dependency Ratio is the sum total of Child Dependency Ratio and Old Age Dependency Ratio. The equations for calculating these two are:

$$\text{Child Dependency Ratio} = \frac{\text{Children below age 15}}{\text{Person 15-64 years of age}} \times 1000$$

$$\text{Old-Age Dependency Ratio} = \frac{\text{Persons age 65 year and over}}{\text{Person 15-64 years of age}} \times 1000$$

Total Dependency Ratio = Child Dependency Ratio + Old age Dependency Ratio

For example, assume that in an area, the persons of age 65 years and over are 8, 00, 01, and children of age 15 years and under are 29, 12, 20. Further, suppose the number of persons between 15-64 years of age is 42, 11, 96. Then the dependency ratios are:

$$\text{Child Dependency Ratio} = \frac{29, 12, 20}{42, 11, 96} \times 1000 = 69.14$$

$$\text{Old-Age Dependency Ratio} = \frac{8, 00, 01}{42, 11, 96} \times 1000 = 18.99$$

$$\text{Total Dependency Ratio} = 69.14 + 18.99 = 88.13$$

In this section, you read about the age and sex structure, population pyramid, sex ratio, and the dependency ratio. Now, answer the question in Check Your Progress 4.

Check Your Progress 4

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) What do you mean by Sex Ratio?

.....

.....

.....

.....

.....

2) What is Old Age Dependency Ratio?

.....

.....

.....

.....

.....

2.7 DEMOGRAPHIC CHALLENGES

Over the years the changes taking place in demographic indicators have presented a number of challenges. In fact, the challenges of demographic change and its widespread economic and social implications have received considerable attention, both in developed as well as developing countries. However, the nature and scale of demographic developments varies from country to country. Some of the demographic challenges are presented below.

- i) While the world's population continues to grow, population growth is negative in many industrial countries, such as Europe and Japan.
- ii) The ageing population is increasing in many countries. Therefore, very soon many countries have to deal with the effects of ageing societies. In some industrial countries, the active population will equal the number of pensioners in only a few decades time.

- iii) The increasing population in the developing countries has resulted in international migration. Moreover, among the developing countries, rise in population in the poorer state (particularly in India) has resulted in interstate migration. Internal migration sometimes leads to tension between the migrants and local people.
- iv) The declining sex-ratio in some countries particularly in India is a cause of concern. The declining ratio has resulted in demographic imbalances and a negation of gender empowerment. The low sex ratio has also yielded social problems like early marriage and sexual atrocities on female sex.
- v) Delayed marriage, less marriage, and no marriage in European countries and Japan has become the hallmark of a second demographic transition. Many interrelated social, economic, and lifestyle changes have been identified as the driving forces of the shift towards delayed entry into parenthood.
- vi) Gay marriages and same sex marriage will pose another challenge to demographic transition in developed countries. Moreover, these two trends are found to have a place in the liberal democratic nations.
- vii) The rural to urban migration is a serious demographic challenge. This is a transition of rural poverty to urban areas. Urban areas face multiple problems, such as unemployment, housing, drinking water, and sanitation. Moreover, it has also given rise to many social evils, such as pick pocketing, robbery, snatching, rape, and murder in urban areas.
- viii) In developing countries, where fertility is declining very slowly, the population increase poses many problems. The provision of education, health care, sanitation, and drinking water are a huge investment on the part of the welfare government.
- ix) It is widely believed that China and India are enjoying the 'demographic dividend' because of the higher percentage of youth in their population. This demographic dividend also necessitates investment in education and in the health of the youth in order for them to move from dependency to assets.

In this section, you read about demographic challenges. Now answer the questions in Check Your Progress 5.

Check Your Progress 5

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) Explain a few demographic challenges.

.....

.....

.....

.....

.....

2.8 LET US SUM UP

In this unit, we discussed the meaning and various measures of demography. The calculations for demographic measures such as birth rate, death rate, infant mortality rate, and maternal mortality rate have been discussed. The factors promoting fertility and those that result in mortality have also been discussed. A section is devoted to the age-sex structure of population. The sex ratio calculation has become very important as the declining sex-ratio, particularly in the age-group 0-6, is a cause of concern for a few northern Indian states of India. The formulae for the calculation of dependency ratio have also been given in this section. The last section of this unit is devoted to demographic challenges. It says that the population is a cause of concern both for the developed as well as developing country. That the declining population far below the replacement level is a cause of concern for many European nations. This unit, in a nutshell, deals with the dynamics of population, which will help the reader in making the calculations for different demographic measures.

2.9 REFERENCES AND SELECTED READINGS

Mishra, B D (1994), *An Introduction to The Study of Population*, South Asian Publisher Pvt. Ltd, New Delhi.

Jhingan, M L & Others (2003), *Demography*, Vrinda Publications (P) Ltd, New Delhi.

Newell, (1988), *Methods and Models in Demography*, Belhaven Press, London.

Seshadri, C and J L Pandey (1991), *Population Education : A National Source Book*, volume-1. NCERT, New Delhi.

2.10 CHECK YOUR PROGRESS- POSSIBLE ANSWERS

Check Your Progress-1

- 1) What do you mean by Demography?

Answer: In common parlance, demography means the study of population. According to Donald J Bougue “Demography is a statistical and mathematical study of the size, composition, spatial of changes overtime in these aspects through the operation of the five processes of fertility, mortality, marriage, migration, and social mobility.”

- 2) Define Proportion.

Answer: A proportion is a ratio in which the number of the numerator is included in the denominator. The formula used for the calculation of proportion is as follows:

$$\text{Proportion} = \frac{x}{x+y}$$

If someone has to calculate the proportion of female population in the Kartarpur Village to the male population then it is

$$\text{Proportion} = \frac{900}{900 + 1100} = .45$$

Note that a proportion could vary between 0.00 to 1.0. The proportion is converted to percentage by multiplying by 100.

Check Your Progress- 2

- 1) What do you mean by CBR ? Write the formula for calculation of CBR?

Answer: The CBR is defined as the ratio of total number of live births (B) in a calendar year in a particular geographical area to the total mid-year population (P) of that area. The ratio is frequently multiplied by 1000. In other words, CBR is always expressed per 1000 population. Equation is

$$\text{CBR} = \frac{\text{Birth in a year}}{\text{Population at mid-year}} \times 1000$$

- 2) Do biological factors affects fertility?

Answer: Biological factors such as age and sex affect fertility. For example, the onset of menstruation among girls and menopause among women are the biological limits to fertility. The food habits of people in certain areas result in the early onset of puberty among girls, which in turn leads to early exposure to sex and marriage.

Check Your Progress-3

- 1) What do you mean by IMR?

Answer: IMR means the death of a child below one year of age. The formula for infant mortality rate is

$$\text{IMR} = \frac{D_I}{B} \times 1000$$

DI = Number of deaths among infants registered during the year

B = Number of live births in the same year

- 2) What is MMR?

Answer: MMR is the number of maternal deaths related to childbearing divided by the number of live births in that year. The equation is

$$\text{MMR} = \frac{M_D}{B_L} \times 100000$$

M_D = Number of maternal deaths relating to child bearing

B_L = Number of live birth

Check Your Progress-4

- 1) What do you mean by Sex Ratio?

Answer: The sex ratio is the number of female per thousand male. That is

$$\text{Sex Ratio} = \frac{\text{Females}}{\text{Males}} \times 1000$$

2) What is Old Age Dependency Ratio?

Answer: The old age dependency ratio is the ratio of number of person above 65 year to the total population in the age-group 15-64. The formula is

$$\text{Old-Age Dependency Ratio} = \frac{\text{Persons age 65 year and over}}{\text{Person 15-64 years of age}} \times 1000$$

Check Your Progress-5

1) Explain a few demographic challenges?

Answer: The demographic challenges are:

- i) While the world's population continues to grow, the population growth is negative in many industrial countries like in Europe and Japan.
- ii) The ageing population is increasing in many countries. Therefore, very soon many countries have to deal with the effects of ageing societies.
- iii) The increasing population in the developing countries has resulted in international migration.. Internal migration sometimes leads to tension between the migrants and local people.



ignou
THE PEOPLE'S
UNIVERSITY

UNIT 3 PREVENTION AND MANAGEMENT OF DISEASES

Structure

- 3.1 Introduction
- 3.2 Common Communicable and Non-Communicable Diseases
- 3.3 Common Diseases in Children
- 3.4 Common Diseases in Adolescents
- 3.5 Common Diseases in Women
- 3.6 Common Diseases in Old Age
- 3.7 Prevention of Common Diseases
- 3.8 National Health Programmes for Control of Communicable Diseases
- 3.9 National Health Programmes for Control of Non -Communicable Diseases
- 3.10 Other National Health Programmes
- 3.11 Let Us Sum Up
- 3.12 References and Selected Readings
- 3.13 Keywords
- 3.14 Check Your Progress-Possible Answers

3.1 INTRODUCTION

According to the World Health Organization (WHO), health is a state of complete physical, mental, and social well being and not merely absence of disease or infirmity. Diseases cause morbidity and mortality. Broadly, there are two types of diseases: communicable and non-communicable diseases. In order to prevent, cure, and manage various diseases, the Government of India has launched several programmes. In this unit, you will know about the prevention and management of diseases. Major thrust has given to prevalence of common diseases in children, adolescent, women and elderly people, you will also study the prevention strategies and national health programmes to manage and control these problems.

After going through the unit you should be able to

- a) explain the measures of communicable and non communicable diseases
- b) explain common diseases in children, adolescents, women, adults and old age
- c) understand common causes and measures to prevent these diseases
- d) describe important activities under various national health programmes.

3.2 COMMON COMMUNICABLE AND NON COMMUNICABLE DISEASES

A disease is an abnormal condition affecting the body of an organism assumed to be a medical condition associated with specific symptoms and signs. The disease in general can be divided into two main categories- communicable diseases & non-communicable diseases.

Table 3.1: Major Courses of Deaths World Wide

No.	Cause of Death	Number (in millions) per year
	Non communicable diseases	
1	Cardiovascular diseases	19.9
2	Cancer	9.0
3	Chronic respiratory diseases	3.8
4	Diabetes	1.6
	Communicable diseases	
1	Tuberculosis	1.6
2	HIV	0.9
3	Malaria	0.445
4	Road side accidents	1.25
5	Natural disasters	0.011
6	Murders	0.477

Source: World health statistics 2018: monitoring health for the SDGs, sustainable development goals Geneva: World Health Organization.

3.2.1 Communicable Diseases

The communicable diseases are those which can spread from one person to another person and are caused by a disease agent which can be parasites or micro – organisms. The variations in signs and symptoms are common, however, each disease has its own specific grouping of symptoms. These micro organisms could be classified as fungus, bacteria, and virus. These are transmitted from one person to another through infected air, water, food, insect bites, body fluids, like blood and secretions, etc. Anderson defined communicable disease as a disease that can be transmitted from one person to another or, from lower animals to higher animals. According to Brain, communicable diseases are infectious diseases that can be passed from one person to another and from an animal to a person. Olaoye classified communicable diseases into four categories: water borne diseases, air borne diseases, insect borne, and other diseases that are transmitted by contacts and through arthropods. Examples of communicable diseases are – those caused by fungus- skin infections etc; bacteria- diarrhoea, sore throat, ear infections, eye infections, boils etc.; viral infections are – sore throat, jaundice, parasites- worm infestation like round worm, thread worm, malaria, etc.

3.2.2 Non-Communicable Diseases

The non-communicable diseases are those which can not spread from one diseased person to another, and are due to dietary deficiencies, life style disorders, behaviour disorder, stress, lack of exercise, occupational stress, etc.

The examples of non communicable diseases follow.

- i) **Deficiency of nutrients in diet:** The following are major forms of deficiencies led to non communicable diseases.
 - a) Vitamin deficiency, such as vitamin A deficiency can result in poor vision in inadequate light; vitamin B complex deficiency can result in

ulcers in the mouth, or anaemia, weakness; vitamin C deficiency can result in bleeding from gums and skin problems; Vitamin D deficiency can result in rickets or defective development of bones in children.

- b) Inadequate intake of proteins in a diet can result in inadequate weight and inadequate height gain in young children.
- c) Inadequate intake of iron in a diet can result in iron deficiency like anaemia in children and pregnant woman.
- d) Inadequate intake of calcium in a diet can lead to bone defects.

ii) Excessive intake of nutrients in diet: Excessive intake of fats in diet can result in heart diseases, obesity; excessive intake of carbohydrates can lead to diabetes; intake of chewing tobacco can result in cancer of mouth and tongue.

iii) Others: Besides deficiencies and excessive intakes of nutrient, there are other factors that led to non communicable disease given below.

- a) Inadequate exercise, sedentary life style, smoking, can lead to heart disease, high blood pressure, cancer of lungs, cancer of mouth
- b) Excessive stress can also result in several mental problems
- c) Intake of chewing tobacco can result in cancer of mouth and tongue.

Table 3.2: Differences between Communicable and Non-Communicable Diseases

Communicable Diseases	Non-Communicable Diseases
1) Transmitted by person-to-person contact	1) Are not transmitted by person-to-person contact
2) Measurable symptoms include fever, headaches, muscle aches, cough, or chill	2) Warning signs of non communicable diseases are high blood pressure, obesity, high cholesterol, diabetes

The United Nations has emphasized that in 2004, non-communicable diseases accounted for 60 per cent of the deaths occurring worldwide. Among non communicable diseases, cardiovascular diseases, cancer and respiratory illness exact major tolls in most regions. Because many non communicable diseases are chronic, their treatment and management requires a comprehensive and coordinated response by the health system. The following non communicable diseases are on the increase in India like:

- i) Cancer and cardiovascular diseases
- ii) Psychosomatic diseases
- iii) Respiratory allergy
- iv) Food poisoning
- v) Psychiatric disorder
- vi) Alcoholic addiction

3.3 COMMON DISEASES IN CHILDREN

Diseases that are common among children are – malnutrition resulting in inadequate weight and height as per their age; Vitamin A & D deficiency leading to night blindness and rickets respectively; diarrhea, infections of respiratory system, ear & eye infections, worm infestations, skin infections, measles, whooping cough and poliomyelitis. The common infectious diseases among children are broadly categorized as

- respiratory-common cough and cold
- skin complaints-hand, foot and mouth diseases
- gastrointestinal diarrhea
- other infections-conjunctivitis

The Infant Mortality Rate (IMR), deaths among children in first year is 38 per 1000 (2015) of live births in India which is still high. In rural areas, this figure is much higher. About 50 to 60 per cent of this is caused by mortality during the neonatal period (0-28 days) and particularly in the first week of life. Several factors contribute to this mortality. These include poor maternal health during pregnancy, frequent child births, inadequate care of mothers at risk, poor infrastructure facilities, lack of care of newborn at birth and practically no facilities for newborn care from primary to tertiary levels. Low birth weight infants, either due to premature birth or due to intra-uterine growth retardation, result from various factors such as low maternal weight and height, frequent pregnancies, maternal malnutrition and anaemia, chronic maternal diseases and pregnancy complications. Low birth weight is particularly associated with premature birth, is a major underlying factor for newborn or infant mortality. Non- immunization of pregnant women with tetanus toxin may result in death due to tetanus in young child. These diseases can be prevented by

- adequate feeding
- supplementation with vitamin-A and iron-folic acid
- immunization with Diphtheria, Polio and Tetanus, measles vaccine
- early diagnosis and management of respiratory infections, diarrhoea
- proper hygiene and sanitation
- safe water and safe disposal of wastes and excreta
- health education of mothers for feeding and good hygienic practices.

The best ways to protect your child against communicable diseases are

- i) To maintain his resistance by being sure he is in good health
- ii) To avoid every known chance of exposure to disease and keep the child away from all persons who are suffering from communicable diseases and
- iii) To take advantage of immunization and vaccination against such diseases

3.4 COMMON DISEASE IN ADOLESCENTS

3.4.1 Need for Care of Adolescents

There are many interrelated reasons and therefore, we need to pay attention to the health of adolescents:

- i) To reduce death and disease in adolescents- an estimated 1.7 million young people aged from 10 to 19 die each year, mainly from accidents, violence, pregnancy related problems, or illnesses that are either preventable or treatable. Many more develop chronic illness that damages their chances of personal fulfilment.
- ii) To reduce the burden of disease in later life as malnutrition in childhood and in adolescence can cause lifelong health problems, as failure to care for the health needs of young pregnant women can damage their own health and that of their babies. This is the age when sexual habits and decisions about risk and protection are formed. Some of the highest infection rates for sexually transmitted infections are in adolescence. The HIV/AIDS pandemic alone is sufficient reason to look at how health services address the needs of adolescents. Many diseases of late middle age, such as lung cancer, bronchitis, and heart disease, are strongly associated with a smoking habit that begins in adolescence.
- iii) To invest in health today and tomorrow as healthy and unhealthy practices adopted today may last a lifetime. Today's adolescents are tomorrow's parents, teachers, and community leaders. What they learn they will teach to their own children. Adolescence is a period of curiosity, when young people are receptive to information about themselves and their bodies, and when they begin to take an active part in decision making.
- iv) To deliver on human rights, the Convention on the Rights of the Child (CRC) says that young people have a right to life, development, and (in Article 24) "the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health". The CRC gives young people the right to preventive healthcare, and calls for specific protection for those in exceptionally difficult conditions, or living with disabilities. Under the CRC, governments not only have a duty to ensure services for good health care, but also have a duty to ensure that young people can express themselves, and that their views are given weight according to their age and maturity.
- v) The protection of human capital is another concern. In some societies, two out of three adolescents are involved in productive work, while many young women below the age of 20 are already mothers. If they are no longer able to fulfil these roles because of injury, illness or psychological damage, the cost is primarily a human one, but there is also a cost to society. Economic development, as well as personal fulfilment, is strongly related to the health and education levels of the population.

3.4.2 Essential Health Services for Adolescents

The core package for improving adolescent health and development should be as follow.

- i) Provide immunization (Immunization monitor growth and development)
- ii) Identify and assess problems and problem behaviour, managing these wherever possible or, referring young people if they cannot
- iii) Offer information and counselling on developmental changes, personal care and ways of seeking help
- iv) Programmes are run for young children but not for an older sister or brother
Adolescent girls need protection from rubella before they become pregnant. Vaccines are also available for meningitis, hepatitis and tetanus.

Rashtriya Kishor Swasthya Karyakram (RKSK)

About 25.3 crore adolescents in the age group 10-19 years in India are in a transient phase of life requiring nutrition, education, counselling and guidance to ensure their development into healthy adults. Considering the various risk factors among adolescents, it has covered six broad areas of health needs of adolescents- a) nutrition, b) sexual and reproductive health (SRH), c) non-communicable disease (NSDs), d) substance abuse, e) injury and violence, 6) mental health. It was launched in 2014 with the following objectives

- to increase the awareness and access to information about adolescent health,
- provision of counselling and health services,
- provision of specific services such as sanitary napkins; iron and folic acid supplementation

Essential List of Clinical Services

- i) General health services for tuberculosis, malaria, endemic diseases, injuries, accidents, and dental care
- ii) Reproductive health including contraceptives, STI treatment, pregnancy care, and post abortion management
- iii) Counselling and testing for HIV, which should be voluntary and confidential
- iv) Management of sexual violence
- v) Mental health services, including services to address the use of tobacco, alcohol and drugs
- vi) Information and counselling on development during adolescence, including reproductive health, nutrition, hygiene, sexuality and substance use

3.5 COMMON DISEASES IN WOMEN

Compared with developed countries, as well as some developing countries, the current Maternal Mortality Ratio (deaths among women during pregnancy and after delivery) is 174 per 100,000 live births (2015) in India which is still high. Maternal Care (during pregnancy, delivery, and lactation) in rural areas and urban slums is woefully inadequate. In rural areas, large numbers of births are occurring outside the institutions, and are attended to by untrained birth attendants. Some of the important causes of maternal mortality (deaths) are sepsis (infections), haemorrhage (bleeding), toxemia, fits and high blood pressure, illegal abortion, and malnutrition. These women usually suffer from anaemia due to deficiency of iron and vitamin B-complex, malnutrition due to inadequate intake of food.

Preventive Measures

Some of the preventive measures required for the improvement of health status of adolescents are narrated below.

- i) Liberalization of Abortion Laws and the enactment of Medical Termination of Pregnancy (MTP) Act in 1971 are the direct outcome of the realization of the fact that induced abortion performed by unqualified persons under unhygienic conditions significantly increased maternal mortality and morbidity. Facilities for MTP services by properly trained and skilled doctors are to be provided, wherever needed, in rural areas and urban slums.
- ii) Systematic efforts are to be made to increase progressively Antenatal Registration and care of pregnant women.
- iii) It is also to be progressively ensured that almost all deliveries are conducted under aseptic conditions by trained health personnel, i.e., the *dais* or female midwives.
- iv) Pregnant and nursing mothers should get two to three doses of tetanus toxin, and, as nutritional supplements, iron and folic acid.
- v) During post natal check-ups, mothers are to be educated on breast feeding, growth monitoring, proper weaning practice and immunization of the child, and on personal hygiene, proper diet and family planning.

3.6 COMMON DISEASES IN OLD AGE

In India more than 9 per cent of the total population is above 60 years of age. The health problems in old age can be classified as follows.

- i) **Health problems due to aging process:** these are due to changes in the body which occur in the body and results in health problems such as cataract (opacity in the lens of the eye), increase in eye pressure resulting in difficulty or glaucoma, deafness (due to nerve degeneration), softening of bones (osteoporosis), difficulty in breathing, changes in mental outlook and decrease in the perception of senses.
- ii) **Problems associated with ageing:** certain disease are more common after 40 years of age such as degenerative diseases of blood vessels and the heart, cancer, are also more common in old age. Accidents due to softening of bones, diabetes, diseases of the joints resulting in difficulty in walking, diseases of the respiratory system such as asthma, infections, and difficulty in passing urine, urinary tract infections, etc., are also present.
- iii) **Psychological problems:** mental changes result in impaired memory, rigidity of outlook, dislike for change, and emotional disorders from social maladjustment.

3.7 PREVENTION OF COMMON DISEASES

The goals of medical care are to promote health, preserve health and to restore health when it is impaired and to minimize suffering and disability resulting from diseases. These goals can be fulfilled by the following measures.

- Adopting healthy life styles such as eating a good and balanced diet, adequate exercise, not smoking, drinking, or other drug abuse,
- Health education
- Regular immunization
- Use of specific nutrients
- Protection against accidents and occupational hazards
- Avoiding allergens
- Control of air, water pollution, or other environmental hazards
- Environmental modifications such as safe water, use of sanitary latrines, improvement in housing, control of pests, cleanliness and hygienic practices
- Regular health checkups for early recognition of diseases
- Seeking health advice at the onset of early signs and symptoms of disease
- Proper rehabilitation in case of disability resulting from diseases.

In this section, you studied about common diseases in children, common diseases in adolescents, common diseases in women, common diseases in old age, and prevention of common diseases. Now answer the questions in Check Your Progress 1.

Check Your Progress 1

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) Mention a few common diseases among adolescents.

.....

.....

.....

.....

.....

2) What are the common diseases among old persons?

.....

.....

.....

.....

.....

3.8 NATIONAL HEALTH PROGRAMME FOR CONTROL OF COMMUNICABLE DISEASES

Various National Health Programmes launched for the control of communicable diseases in India are as follows.

3.8.1 Revised National TB Control Programme (RNTCP)

In India, nearly 14 million people suffer from Tuberculosis, and 2.2 million cases are added every year. Nearly 5 lakh deaths in our country are due to TB every year. The NTBCP was started in 1962 and it was revised in 1992 with the introduction of DOTS (Directly Observed Treatment with Short term chemotherapy) to overcome the problem of defaulters. Two important objectives are: (a) to cure at least 85 per cent of all new cases of TB, (b) to detect at least 70 per cent of total expected TB cases.

Revised National TB Control Programme (RNTCP), based on the internationally recommended Directly Observed Treatment Short-course (DOTS) strategy, was launched in 1997. In terms of treatment of patients, RNTCP has been recognized as the largest and the fastest expanding TB control programme in the world in 2006. India's National TB Control programme provides quality assured diagnostic and treatment services to all the TB patients including necessary supportive mechanisms for ensuring treatment adherence and completion. In 2017 it was announced that the national goal was now the elimination of TB in India by 2025. At the same time the launch took place of the next 5 year plan, the NSP 2017 - 2025.

Strategies

- Early detection of symptoms (3 weeks cough, fever, weight loss)
- Sputum examinations (3 samples on the spot early morning)
- Drugs on alternate days in the presence of health persons in intensive phase for 1 month
- During the continuation phase, the first dose is taken by patient in the presence of health persons, and then, at home

3.8.2 National Vector Borne Disease Control Programme (NVBDCP)

The National Vector Borne Disease Control Programme is an umbrella programme for prevention and control of vector borne diseases like, Malaria, Japanese Encephalitis (JE), Dengue, Chikungunya, Kala-azar and Lymphatic Filariasis. Out of these six diseases, three diseases namely Kala-azar, Lymphatic Filariasis and Malaria have been targeted for elimination. The general strategy for prevention and control of vector borne diseases under NVBDCP is described below:

- Integrated vector management followed spray in selected high risk areas, insecticidal nets, use of larvivorous fish, anti-larval measures played important role.
- Disease management including early detection with surveillance and complete effective treatment, strengthening of referral services, epidemic preparedness and rapid response.
- Supportive interventions like, behaviour change communication, inter-sectoral convergence, capacity building actively associated.
- Vaccination only against J.E.
- Annual mass drugs administration in respect of Lymphatic Filariasis.

3.8.3 National AIDS Control Programme

In India, nearly 3-5 million people are infected with the disease HIV virus. And there is a rising trend in all states. The national programme for control of AIDS was started in 1987. The objectives of this programme are (a) prevention of virus infection, (b) decreasing morbidity & mortality, and (c) minimize socio-economic impact.

Strategies

- Information Education Communication (IEC) and Social mobilization
- Condom promotion
- Blood safety (ban on professional donors, HIV testing, licensing of blood banks, training)
- Surveillance through lab facilities in medical colleges
- Control of Sexually Transmitted Diseases (STD)
- Clinical management (training of staff and provision of drugs)
- Care and support of cases through NGOs

3.9 NATIONAL HEALTH PROGRAMMES FOR CONTROL OF NON- COMMUNICABLE DISEASES

In the previous section, you read about the national health programmes launched by the Government of India for the control of communicable diseases. In this section, you will read about the national programmes launched for the control of non-communicable diseases.

3.9.1 National Programme for Control of Blindness and Visual Impairment (NPCB&VI)

This was launched in the year 1976 as a 100% centrally sponsored scheme (now 60:40 in all states and 90:10 in NE States) with the goal of reducing the prevalence of blindness to 0.3 percent by 2020. The total estimate is 30 million blind persons in the world, 6 million are in India. Almost 80 per cent of this are blind due to cataract and 7.35 per cent due to refractive errors. The objectives of the NPCB programme are to reduce the prevalence rate of blindness.

Strategies

- Strengthening service delivery through health centres and hospitals
- Developing human resources for eye care by training health manpower
- Promoting outreach activities and public awareness by health education and mobile clinics
- Developing institutional capacity by providing equipment.

Infrastructure at Tertiary Level (State Level)

- Opening Regional Institutes of Ophthalmology
- Up gradation of the Ophthalmology(Eye) departments of medical colleges
- Up gradation of the Ophthalmology(Eye) departments of medical colleges for training of Paramedical Ophthalmic Assistants

- Eye banks have been developed in government and non government sector.

Infrastructure at Secondary Level (District level)

Districts Hospitals have been equipped for ophthalmic services under NPCB. Through District Blindness Control Societies scheme has been extended to cover the entire country.

Infrastructure at Primary Level (village level)

There are central mobile units (attached to medical colleges) and district mobile units which make visit to villages for services. Primary health centres have been equipped with ophthalmic equipment and by posting para medical ophthalmic assistants.

3.9.2 National Programme for Prevention and Control Of Deafness (NPPCD)

Hearing loss is the most common sensory deficit in humans today, as per WHO estimate the prevalence is 6.3 percent of Indian population. It shows a severe loss of productivity, both physical and economic. NPPCD started 2007 with following objectives:

- To prevent avoidable hearing loss on account of disease or injury.
- Early identification, diagnosis and treatment of ear problems responsible for hearing loss and deafness.
- To medically rehabilitate persons of all age groups, suffering with deafness.
- To strengthen the existing inter-sectoral linkages for continuity of the rehabilitation programme, for persons with deafness.
- To strengthen the service delivery for ear-care.

3.9.3 National Programme for Healthcare of the Elderly (NPHCE)

To address health related problems of elderly people, NPHCE is being implemented in 100 identified districts of 21 States during the 11th Plan period. Eight regional geriatrics centres as referral units have also been developed in different regions of the country under the programme.

The basic aim of the NPHCE is outreach services by preventive and promotive care, management of illness, health manpower development for geriatric services, medical rehabilitation and therapeutic intervention and IEC are some of the strategies envisaged.

National Oral Health Programme (NOHP)

It is an initiative of the 12th Plan launched in the year 2014-15 to strengthen the public health facilities of the country for an accessible, affordable & quality oral health care delivery.

3.9.4 National Iodine Deficiency Disorders Programme (NIDDCP)

Iodine is an essential micronutrient required daily at 100-150 micrograms for the entire population for normal human growth and development. Deficiency of

Iodine can cause physical and mental retardation, cretinism, abortions, stillbirth, deaf, mutism, squint, loss of IQ, compromised school performance and various types of goiter etc. Results of Sample Surveys () conducted in 414 districts covering all the States/ Union Territories have revealed that 337 districts are endemic where the prevalence of Iodine Deficiency Disorders (IDD) is more than 5 percent. No State/UT is free from IDD. Iodine is a micronutrient which is required in the amount of 100 150 micro grams daily for normal human growth and development. Its deficiency results in abortion, still birth (dead born babies), mental retardation, deaf-mutes, squint, dwarfism, goitre in all ages, neuro motor defects, etc. It is estimated about 200 million people in our country are at risk of developing IDD. In India it is estimated that 71 million people suffer from endemic goitre and other IDDs. The objective of this programme is to elimination of IDD.

Strategies

- Use of iodized salt in place of common salt.
- Monitoring and surveillance for the cases
- IEC for health education.

3.9.5 National Mental Health Programme (NMHP)

NMHP was started in 1982 with the objectives to ensure availability and accessibility of minimum mental health care for all, to encourage mental health knowledge and skills and to promote community participation in mental health service development and to stimulate self-help in the community. Gradually the approach of mental health care services has shifted from hospital based care (institutional) to community based mental healthcare, as majority of mental disorders need not hospitalization and can be managed at community level. The number of people affected by mental illness in India is estimated to vary from 18-20 per thousand population in various Morbidity Surveys, which is not less than that in developed countries. Mental health is not only related to relations between persons, but also to individuals' relations with community, social institutions, the ways of living, and working. The National Mental Health Programme was incorporated into the Central Scheme in 1982. The objectives of NPMH are (a) to ensure availability and accessibility of minimum mental health care for all in future, (b) to encourage applications of mental health knowledge in general health care, (c) to promote community participation in mental health services.

Strategies

- Training of all workers in the mental health team at identified nodal institutions
- Health education to increase public awareness and to reduce social stigma
- Services for care of mentally ill patients in OPDs & indoors
- Collection of related data for future planning, monitoring & research.

3.9.6 National Programme for Prevention and Control of Cancer, Diabetes, Cardio Vascular Disease and Stroke (NPCDCS)

India in tandem with its rapid social and economic development is experiencing a major and rapid health transition with a rising burden of non-communicable

diseases (NCDs). In order to prevent and control major NCDs, Government of India is implementing the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) in all States across the country with the focus on strengthening infrastructure, human resource development, health promotion, early diagnosis, effective management and referral services. For activities up to district level and below under NPCDCS, States are given financial support under the umbrella of NHM. Cancer has become one of the ten leading causes of death in India. In India it is estimated that there are nearly 1.5 – 2 million cancer cases at any given point of time. 7 lakh new cases of cancer occur every year in India, and 3 lakh deaths occur annually due to cancer.

Objectives

- Primary prevention of cancers by health education regarding hazards of tobacco consumption and necessity of genital health for prevention of cervical cancer
- Secondary prevention, i.e., early detection and diagnosis cancers, for example, cancer of cervix, breast cancer and of the oro-pharyngeal cancer by screening methods and patients' education on self examination methods.
- Strengthening of existing therapeutic services- palliative care in terminal cancers.

Strategies

- Development of oncology (cancer) departments in medical colleges/ hospitals
- Scheme for district projects: accordingly, the scheme for district projects, preventive health education, and early detection and pain relief measures was started
- Financial assistance to voluntary organizations
- Cobalt therapy installation
- Development and dissemination of health education materials
- Procurement, supply and distribution of pain relief medicines
- Assistance for regional research and treatment centres
- National Cancer Registry Programme (NCRP) for keeping records of cancer patients.

Epidemiological studies show prevalence of diabetes mellitus is 1-2 percent in India. An expert committee was constituted by the Government of India in 1986 to formulate a national plan of action for the implementation of the National Diabetes Control Programme during the Seventh Five Year Plan.

Objectives

- Identification of high risk subjects at an early stage with a focus on primary prevention
- Early diagnosis of disease and institution of appropriate management so as to reduce morbidity and mortality
- Prevention, arrest, or slowing of complications of the disease

- Identification of subjects with partial or total physical handicaps and to ensure their rehabilitation.

Strategies

- Early identification and surveillance of the cases by health workers, doctors at PHC, CHC, and hospital specialists
- Case detection at the hospital level by specialists and trained manpower
- Monitoring and evaluation at the national level by the All India Institute of Medical Sciences, Department of Medicine.

In this section, you studied the national health programme for control of communicable diseases, the national health programmes for control of non communicable diseases. Now answer the questions in Check Your Progress-2.

Check Your Progress 2

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

- 1) Name a few programmes for control of Communicable Diseases.

.....

.....

.....

.....

.....

- 2) What are some of the programmes for control of Non-Communicable Diseases.

.....

.....

.....

.....

.....

3.10 OTHER NATIONAL HEALTH PROGRAMMES

Besides the specific programmes launched for the control of communicable and non communicable diseases, the Government of India has also launched a programme for the control of diseases and to raise health standards of people.

3.10.1 National Health Mission (NHM)

The National Health Mission (NHM) encompasses its two sub-missions, the national rural health mission and the national urban health mission which include health systems strengthening both rural and urban areas for communicable and non-communicable diseases. The NHM envisages achievement of universal access to equitable, affordable & quality health care services that are accountable

and responsive to people's needs. Major programmes under national health mission are Reproductive-Maternal-Neonatal-Child and Adolescent Health (RMNCH+A), Free Drugs Service Initiative, Drugs and Vaccines Distribution and Management System (DVDMS), National Quality Assurance Programme, *Kayakalp*, Free Diagnostics Service Initiative, Pradhan Mantri National Dialysis Programme.

National Quality Assurance Programme (NQAP)

For improving quality of care at public health facilities, operational guidelines for quality assurance in public health facilities and quality standards for DHs, CHCs, PHCs and urban PHCs (UPHCs) were released in November, 2013. These Standards have followed international accreditation by International Society for Quality in Healthcare (ISQua). Under the NQAP programme, the health facilities undertake their assessment; find-out the gaps, followed by prioritisation and action for their closure.

Kayakalp

Kayakalp initiative was launched to promote cleanliness, hygiene and infection control practices in public health facilities where public healthcare facilities are appraised. Those facilities that show exemplary performance meeting standards of protocols of cleanliness, hygiene and infection control receive awards and commendation. For this, *swachhta* guidelines for public health facilities were released in 2015.

Free Drugs Service Initiative (FDSI)

Under the NHM-Free Drug Service Initiative, substantial funding is being given to States for provision of free drugs and setting up of systems for drug procurement, quality assurance, IT based supply chain management system, training and grievance redressal etc. Detailed Operational Guidelines for NHM-Free Drugs Service Initiative were developed and released to the States on 2nd July, 2015.

Drugs and Vaccines Distribution and Management System (DVDMS)

DVDMS is a web based supply chain management system that deals with the purchase, inventory management & distribution of various drugs, sutures and surgical items at all government health facilities and Drug Distribution Counters (DDCs) within the State/UT.

Free Diagnostics Service Initiative (FDSI)

Operational Guidelines on this Initiative were developed in consultation with experts and the States and disseminated among States/UTs on 2nd July, 2015.

3.10.2 Pradhan Mantri National Dialysis Programme (PMNDP)

Recognizing the importance of health in the process of economic and social development and improving the quality of life and in order to follow a synergistic approach by relating health to determinants of good health viz. segments of nutrition, sanitation, hygiene and safe drinking water, the Government of India launched the National Rural Health Mission in 2005. National dialysis programme, including model Request for Proposal (RFP) from private providers to provide hemo-dialysis services in DHs, were released in 2016. Under this

initiative, free dialysis services are provided to poor people covering all the states under NHM. The thrust of this programme is to improve the availability of and access to quality health care by people, especially for those residing in rural areas, the poor, women and children.

Objectives

- Provide a female health activist in each village Accredited Social Health Activities (ASHA)
- Village health plan prepared through a local team headed by the Health & Sanitation Committee of the Panchayat
- Strengthen rural hospitals for effective curative care and making it accountable to the community through Indian Public Health Standards (IPHS)
- Integration of vertical health and family welfare programmes and funds for optimal utilization of funds and infrastructure
- Strengthening delivery of primary healthcare
- Mainstream AYUSH into the public health system
- Integrate health concerns with determinants of health like sanitation and hygiene, nutrition, and safe drinking water through a District Plan for Health
- Decentralization of programmes for district management of health
- Address the inter-state and inter-district disparities
- Time-bound goals and report publicly on their progress
- Improve access of rural people, especially poor women and children, to equitable, affordable, accountable, and effective primary healthcare.

Strategies

- Train and enhance capacity of Panchayati Raj Institutions (PRIs) to own, control and manage public health services.
- Promote access to improved healthcare at household level through the female health activist (ASHA).
- Health Plan for each village through Village Health Committee of the Panchayat.
- Strengthening sub-centre through an untied fund to enable local planning and action and more Multi Purpose Workers (MPWs).
- Strengthening existing Primary Health Centers (PHCs) and Community Health Centre (CHCs), and provision of 30-50 bedded CHC per lakh population. Preparation and Implementation of an inter-sectoral District Health Plan prepared by the District Health Mission, including drinking water, sanitation & hygiene and nutrition.
- Integrating vertical Health and Family Welfare programmes at National, State, Block, and District levels.
- Technical Support to National, State and District Health Missions, for Public Health Management.
- Strengthening capacities for data collection, assessment and review for evidence based planning, monitoring and supervision.

- Formulation of transparent policies for development of human resources for health.
- Developing capacities for preventive health care at all levels.

3.10.3 Reproductive and Child Health (RCH) Programme

This programme has been launched in India on 15th October 1997 to provide integrated reproductive & child health care. The objectives of this programme are to meet all the felt needs for contraception, and to reduce the infant and maternal morbidity and mortality, so that there is reduction in the desired level of fertility.

Strategies

- Community participation in planning for services and prioritizing
- Client centred approach to service provision
- Upgraded facilities and improved training
- Emphasis on good quality care
- Absence of contraceptive targets and incentives
- Making services gender sensitive
- Multi sectoral approach in implementing and monitoring services.
- Components of RCH Programme.

Broad areas under this programme divided in to five categories given below.

- i) **Maternal Health:** Services for mothers during pregnancy, child birth and post-natal period including safe abortion services when required.
- ii) **Child Health:** Services for children including newborn care, immunization, vitamin A prophylaxis, oral rehydration therapy (ORT) for diarrhoea, management of Acute Respiratory Infections (ARI), anaemia control, etc.
- iii) **Prevention and Management of Unwanted Pregnancy:** Services for eligible couples through promotion of use of contraceptive methods as well as infertility services when required.
- iv) **Prevention and Management of Reproductive Tract Infections (RTIs):** services for early detection, investigation and treatment.
- v) **Adolescent Health:** Adolescent health services including counselling on family life and reproductive health.

Besides above health schemes few other schemes started for women, like Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakaram (JSSK), Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), Web Enabled Mother and Child Tracking System (MCTS). Janani Suraksha Yojana (JSY) is a safe motherhood intervention being implemented with the objective to reduce maternal and neonatal mortality by promoting institutional delivery among pregnant women through 'accredited social health activist' (ASHA), an effective link between the Government and pregnant women. Janani Shishu Suraksha Karyakaram (JSSK) started in 2011 for all pregnant women absolutely free and no expense delivery. In 2013, the scheme was expanded to cover complications during ante-natal and

post-natal period and also sick infants up to 1 year of age. The Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) launched in 2016 for all pregnant women in the country are provided fixed day, free of cost assured and quality antenatal Care. For tracking all these services an innovative strategies of information technology used called Web Enabled Mother and Child Tracking System (MCTS) to register and track every pregnant woman, neonate, infant and child by name for quality ANC, INC, PNC, Family Planning, Immunization services etc. More than 13.88 crore pregnant women and 11.93 crore children have been registered under MCTS till 10.01.2018.

3.10.4 Integrated Child Development Services Programme (ICDS)

Integrated Child Development Services (ICDS) is the largest national programme for mother and child development in the world. The Planning Commission and a National Policy for Children constituted inter-ministerial study teams in 1970. The recommendations made by these teams were adopted by the Government of India in 1974, and a blueprint for ICDS was drawn up by the Ministry of Social Welfare. The beneficiaries are children below 6 years, pregnant and lactating mothers and women in the age group of 15 to 44 years.

Objectives: The five objectives of these schemes are listed below.

- To improve the nutritional and health status of children in the age group of 0-6 years
- To lay the foundations for proper psychological, physical and social development of the child
- To reduce the incidence of mortality, morbidity, malnutrition and school drop-out
- To achieve effective co-ordination of policy and implementation amongst the various departments to promote child development
- To enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper nutrition and health education.

Package of Services

All the ICDS services are provided through a village based centre, the Anganwadi Centre (AWC), in an integrated manner to enhance their impact on mothers and children. Each AWC is run by an anganwadi worker (AWW) supported by a helper. Each AWC caters to a population of approximately 1,000 in rural and urban areas and 700 in tribal areas. The following services are provided under the programmes.

- i) **Supplementary Nutrition-** This includes supplementary feeding, prophylaxis against vitamin A deficiency and control of nutritional anaemia. All families in the anganwadi area are surveyed, to identify low income families and deprived children below the age of six years, pregnant and nursing mothers and adolescent girls. They avail the facility of supplementary feeding support for 300 days in a year. The feeding is aimed only at supplementing and not substituting for family food. The type of food varies from state to state but usually consists of a hot meal cooked at the *anganwadi*, containing a combination of pulses, cereals, oil, vegetables, and sugar. Some states provide a ready to eat meal containing the same basic ingredients.

- ii) **Immunization-** Immunization of pregnant women against tetanus and immunization of infants against six vaccine preventable diseases poliomyelitis, diphtheria, pertussis, tetanus, tuberculosis and measles is provided to children. PHC and its infrastructure carry out immunization of infants and expectant mothers as per the national immunization schedule.
- iii) **Health Check-Ups-** At the *anganwadi*, children, adolescent girls, pregnant women and nursing mothers are examined at regular intervals by the Lady Health Visitor (LHV) and Auxiliary Nurse Midwife (ANM) who also diagnose minor ailments and distribute simple medicines.
- iv) **Referral Services-** During health checkups and growth monitoring, sick or malnourished children in need of medical attention are provided referral services through ICDS. The AWW has also been oriented to detect disabilities in young children. She lists all such cases in a special register and refers them to the medical officer.
- v) **Growth Monitoring and Promotion-** Growth monitoring and nutrition surveillance are two important activities in ICDS. Both are important for assessing the impact of the health and nutrition related services. Children below the age of three years are weighed once a month and children from three to six years are weighed quarterly. Growth is charted both to detect growth faltering and to assess their nutritional status. Identified severely malnourished children are given special, therapeutic supplementary food or just double ration, and are also referred to medical services.
- vi) **Nutrition and Health Education-** Nutrition, Health and Education (NHED) are a key element of the work of the *anganwadi* worker. This is aimed at the capacity building of women especially in the age group of 15-44 years so that they can look after their own health and nutrition needs as well as those of their children and families. NHED is imparted through sessions, home visits and demonstrations.
- vii) **Early Childhood Care and Pre-school Education (ECCE)-**The Early Childhood Care and Pre-school Education component of the ICDS is considered the backbone of the ICDS programme. ECCE focuses on the total development of the child up to six years. It includes promotion of early stimulation of the under threes through intervention with mothers.
- viii) **Adolescent Girls Scheme-**For the first time in India a special intervention has been devised for adolescent girls, using the ICDS infrastructure. This intervention focuses on school drop out girls in the age groups of 11-18 years, to meet their needs of self development, nutrition health education, literacy, recreation, and skill formation.

In this section, you studied about other national health programmes, reproductive and child health programme, integrated child development services programme. Now answer the questions in check your progress 3.

Check Your Progress 3

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

- 1) What is the Reproductive and Child Health Programme?

2) What do you understand by ICDS?

3.11 LET US SUM UP

Prevention and effective management of diseases play key role in public health. Basic awareness about diseases, health education and prevention strategies can reduce health problems. There are mainly two types of diseases- Communicable and non-communicable diseases. Communicable diseases are those which can spread from one person to another person and are caused by a disease agent such as parasites or micro organisms. Non-communicable diseases are those which cannot spread from one infected person to another and are due to dietary deficiencies, life style disorders, behaviour disorder, stress, lack of exercise, occupational stress, etc. The common diseases among children are – malnutrition resulting in inadequate weight and height as per their age, vitamin A & D deficiency. While the common problems and diseases among adolescents are from sexual, HIV/AIDS, substance use, early pregnancy, accidents, violence related problems that are either preventable or treatable. Similarly, Common diseases in women are anaemia due to deficiency of iron and vitamin B-complex, under-nutrition due to inadequate intake of food. Some of the important causes of maternal mortality are sepsis, (Infections), haemorrhage (bleeding), toxemia, and malnutrition. Lastly, the greying population also directed health concern and common disease in old age, like cataract, glaucoma, deafness, osteoporosis, difficulty in physical and mental conditions. The degenerative diseases of blood vessels and heart, cancer, are also common in old age due to softening of bones, diabetes, diseases of the joints resulting in difficulty in walking, diseases of the respiratory system such asthma, infections, and difficulty in passing urine, urinary tract infections, etc.

3.12 REFERENCES AND SELECTED READINGS

Nagla, Madhu (2018) Sociology of Health and Medicine, Rawat Publication, Delhi.

MOHFW (2018) National Health Profile, Central Bureau of Health Intelligence, Ministry of Health & Family Welfare, Govt. of India, New Delhi.

World Health Statistics (2018) Monitoring Health for the SDGs, Sustainable Development Goals, Geneva: World Health Organization.

3.13 KEYWORDS

- 1) **ANC**- Ante Natal Care refers healthcare provided to mother and child during pregnancy.
- 2) **INC**- Intra Natal Care refers the stage of healthcare during birth of child.
- 3) **PNC**- Post Natal Care refers healthcare provided to mother and child after the birth of child.
- 4) **AYUSH** – Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy.

3.14 CHECK YOUR PROGRESS-POSSIBLE ANSWERS

Check Your Progress 1

- 1) Mention a few common diseases among Adolescents.

Ans. A few common diseases among adolescents are: pregnancy related problems or illnesses. Some of the highest infection rates for sexually transmitted infections are among adolescents. HIV/AIDS is very high among adolescents.

- 2) What are the common diseases among old persons?

Ans. Common diseases among old persons are :such as cataract (whiteness in the lens of the eye), increasing in pressure in the eye resulting in difficulty in vision (glaucoma), deafness (due to nerve degeneration), softening of bones (osteoporosis), difficulty in breathing, changes in mental outlook and decrease in the perception of senses.

Check Your Progress 2

- 1) Name a few programmes for control of communicable diseases.

Ans. There are many national programmes for control of communicable diseases like tuberculosis, malaria, iodine deficiency, cancer control, diabetes control, reproductive and child health etc. The objectives National Tuberculosis Control Programme (NTBCP) are to cure at least 85 per cent of all new cases of TB and detect at least 70 per cent of total expected TB cases. Similarly, National Anti Malaria Programme/ National Programme for Control of Vector Borne Diseases the thrust has given to reduce the prevalence of malaria.

- 2) What are some of the programmes for control of non-communicable diseases?

Ans. Some of the programmes for control of non-communicable diseases are:

National Programme for Control of Blindness, National Programme for Mental health, National Cancer Control Programme, National Diabetes Control Programme.

Check Your Progress 3

- 1) What is the reproductive and child health programme?

Ans. In India, this program has launched on 15th October 1997 with the aim of providing integrated reproductive and child health care. Two major objectives are to meet all the felt needs for contraception and reduce the infant and maternal morbidity and mortality, so that there is reduction in the desired level of fertility.

- 2) What do you understand by ICDS?

Ans. Integrated Child Development Services (ICDS) is the largest national programme for mother and child development in the world. The objectives of this programme are (a) to improve the nutritional and health status of children in the age group of 0-6 years; (b) to lay the foundations for proper psychological, physical and social development of the child; and (c) to reduce the incidence of mortality, morbidity, malnutrition and school drop-out.

UNIT 4 HEALTH AND POPULATION POLICY

Structure

- 4.1 Introduction
- 4.2 National Health Policies: Concept and Evolution
- 4.3 National Health Policy -1983
- 4.4 National Health Policy - 2002 and 2017
- 4.5 National Population Policies: Concept and Evolution
- 4.6 National Population Policy-2000
- 4.7 Interfaces between Health and Population Policy
- 4.8 Let Us Sum Up
- 4.9 References and Selected Readings
- 4.10 Check Your Progress-Possible Answers

4.1 INTRODUCTION

Policy is an important formal document that gives the direction and decision on specific subjects for development planning. You must be aware that human resources are most important resource of any country's development planning. They make singular contributions to development; hence governments formulate and implement policies and programmes that are aimed at improving the quality of their human resources. While population is a crucial factor with respect to development, the health of the people plays a critical role in transforming them into a qualitative and productive human resource. That is why policies relating to health and population are considered very important. The aim of this unit is not only discussing about health and population policies in India and changes but also its impact on development. This unit will also discuss about the national and state levels health programmes in the country.

After studying this unit you will be able to

- a) describe significance of policies towards health and population,
- b) explain Indian national health policies and its changes with time,
- c) examine national population policies and its impact on development.

4.2 NATIONAL HEALTH POLICIES: CONCEPT AND EVOLUTION

Policy refers one important statement of country or institution towards its future planning and development, particularly health, education, population or any other domain. World Health Organization (WHO) constitution has been accepted health as fundamental right for everyone; the Universal Declaration of Human Rights also incorporates it under Article 25. Therefore, formulation of national health care policies by individual countries becomes imperative. This is said because health care by the public sector is weaved through the state, central and local governments. They enunciate policies, establish health care delivery systems, set up goals with the major objective of economic and social development, and improve the quality of life of the people.

In the Indian context, strategies towards preventative, curative and promotive health care delivery system were initiated during pre-independence days. After independence, a number of committees were set up to concretize ideas and strategies for attaining health goals. Since the inception of the planning process in the country, successive Five Year Plans have been providing the framework within which the states are free to develop their health service infrastructure and facilities for medical education. However, it took 36 years after independence to formulate a comprehensive National Health Policy which was first announced in 1983. Subsequently, in keeping with public expectations, available financial resources, and an increase in public health administrative capacity, the National Health Policy, 2002 was formulated and put into practice, like health, population issues have also been an area of major concern for Indian policy makers. Rapid population growth has been a major concern in the context of plans and policies adopted for overall development of the country. In fact, a number of social scientists hold the view that the large size of population is the mother of all the problems in the country, and once the issue of rapid population growth is dealt with, all other problems will automatically get solved. The country, thus, has a lengthy history of population policy. In 1952, the Government of India began, in a modest way, one of the earliest national government sponsored family planning efforts. A National Population Policy statement was released by the Government of India on 16th April, 1976. The population strategies adopted after independence went through many changes. It was only in 2000, that a comprehensive National Population Policy was announced by Government of India.

4.2.1 National Health Policy: The Concept

A health policy is an expression of what a health care system should be, so that it can meet the health care needs of the people. The World Health Organization's concept of healthy public policy is placing health on the agenda of policy makers in all sectors and at all levels, directing them to be aware of the health consequences of their decisions, and to accept their responsibilities for health (WHO 1986). Governments are ultimately responsible for providing or organizing how the health services will be provided to their citizens. Health policies are dynamic, and thus, need to be reviewed on a regular basis to ensure that these are a reflection of government's vision and priorities taking into account the changing realities and socio-cultural circumstances of the country.

Health is a state subject in India. As India has a federal system of government, its Constitution provides for a clear division of powers between States and the Centre through three Lists, The Union List, the State List and the Concurrent List. The State List consists of subjects of local interest such as Public Health, Police, etc. However, health, today, forms an integral part of the national socio-economic planning providing a holistic understanding of health with the framework that States need to pursue to achieve the goals of development. A beginning was made even during the colonial days. After independence, India adopted the welfare state approach, wherein a national health system was envisaged. The State's role was to be central to providing services to the population. The health activities for the State were formulated through the five year plans. Each plan period had a number of schemes and every subsequent plan added a few more and dropped a few others.

The current National Health Policy has emerged from the continuous process of reviews by various committees constituted at intervals to provide guidelines to the government for national health planning. These committees are as follows.

- The Health Planning and Development Committee Report, popularly known as Bhore Committee Report, 1946, were on the lines of Britain's National Health Service Scheme. Sir Joseph Bhore made recommendations that formed the basis for organization of basic health services in India. He made a case for social orientation of medical practice coupled with high a level of public participation.

The following were the salient recommendations of the Bhore Committee

- Integration of preventive and curative services at all administrative levels
- Formation of Village Health Committees
- Provision of Social Doctor
- Intersectoral approach to development of health services
- Three month training programmes in preventive and social medicine to prepare social physicians

Taking a clue from the Bhore Committee Report, a beginning was made in 1952 to set up primary health centres to provide integrated promotive, preventive, curative, and rehabilitative services to the entire rural population of the country.

- Health Survey and Planning Committee Report or Mudaliar Committee Report, 1962 stressed on developing health services infrastructure and the health cadre at the primary level. It also recommended setting up of grassroots level workers in the form of auxiliary nurse midwife.
- Chadha Committee Report (1963) called for adoption of the malaria eradication programme.
- Mukerji Committee Report (1966) worked out the details of the Basic Health Services to be provided in rural and urban areas.
- Jungalwalla Committee Report (1967) recommended integration of all variety of health services.
- Kartar Singh Committee Report (1973) gave recommendations on procedure for the distribution of health cadres at the primary level.
- Srivastava Committee Report (1975) on Medical Education and Support Manpower recommended creation of bands of para professionals and semi professional health workers from within the community, e.g., school teacher and postmasters, to provide simple promotive, preventive, and curative health services needed by communities. On the pattern of the University Grants Commission, the establishment of a Medical and Health Education Commission for planning and implementing reforms needed in health and medical education was recommended.

Besides these committees, the implementation of a Rural Health Scheme, initiated in 1977, made contributions to the improvement of health infrastructure and services. Under this scheme medical colleges were involved in imparting total health care to the selected PHCs, with the aim of reorienting medical education to the needs of the rural people, and, also to provide training to multipurpose workers engaged in the control of various communicable disease programmes.

Finally, the widespread disillusionment with vertical programmes developed worldwide. In 1978, the need to provide universal health services came under the Primary Health Care Declaration at Alma Ata, which India was a signatory and followed. Accordingly, steps were taken to promote education concerning prevailing health problems; ensure adequate supply of safe water and basic sanitation; provide maternal and child health care including family planning, and immunization; ascertain prevention and control of locally endemic diseases; effect appropriate treatment of common diseases and injuries; promote mental health; and, provide essential drugs. On the whole, it emphasized an integration of preventive, promotive, curative and rehabilitative health services that had to be made accessible and available to the people.

Evidently, by the end of 1980s, India had built up a vast health infrastructure and initiated several national health programmes, commissions, constituted and the Central Council of Health and Family Welfare. However, there was a growing realization that public health initiatives in the country did not meet with the desired success. In 1983, the government made a major move in the health sector by announcing a National Health Policy as a corrective measure.

In this section, you read about the concept and evolution of the National Health Policy on Health. Now, answer the questions given in Check Your Progress 1.

Check Your Progress 1

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) Write a brief note on Health Committees constituted in India.

.....

.....

.....

.....

.....

4.3 NATIONAL HEALTH POLICY – 1983

The Alma Ata Declaration of 1978 propounded the concept of ‘Health for All’ by year 2000. It was signed by 134 countries, including India, and 67 agencies. The declaration advocated the provision of first contact services and basic medical care with the framework of an integrated health services. The Declaration affirmed that it is the responsibility of the State to provide comprehensive primary health care to its people. This led to the formulation of India’s first National Health Policy (NHP) in 1983. The major goal of NHP-1983 was to provide universal,

comprehensive primary health care services. It also underlined the role of private and voluntary organizations towards integration of health services.

4.3.1 Feature of NHP-1983

Some of the important features of National Health Policy 1983 are

- i) Need for providing primary health care with special emphasis on the preventive, promotive and rehabilitative aspects.
- ii) Population stabilization- the policy emphasized small families through voluntary efforts and moving towards the goal of population stabilization.
- iii) Medical and Health Education- emphasis was laid on the effective delivery of health care services that would depend largely on the nature of education, training, and appropriate orientation towards community health for all categories of medical and health personnel, and their capacity to function as an integrated team.
- iv) Re-orientation of the existing health personnel- The policy emphasized changes and innovation that were required to be brought about in the entire approach to health and manpower development, ensuring the emergence of fully integrated bands of workers functioning within the “ Health Team” approach.
- v) Practitioners of indigenous and other systems of medicine and their role in healthcare- the policy envisaged that the country has a large stock of health manpower comprising of private practitioners in various systems such as Ayurveda, Unani, Sidha, Homeopathy, Yoga, Naturopathy, etc. These resources have not so far been adequately utilized. The practitioners of these systems enjoy high local acceptance and respect at the community level. It is, therefore, necessary to initiate organized measures to enable each of these systems of medicine and healthcare to develop in accordance with its genius.

4.3.2 Implications of National Health Policy

In pursuance of this policy, an effective and efficient health care system for its citizens, particularly for the vulnerable groups like women, children and the underprivileged, was proposed to be established. This noteworthy initiative aimed at reaching the entire population with a package of primary health care. Stress was placed on the creation of an infrastructure for primary health care covering related services and activities like nutrition, drinking water supply, and sanitation; active involvement and participation of voluntary organizations; provision of essential drugs and vaccines; qualitative improvement in health and family planning services; and provision of adequate training and medical research. The slogan of NHP-1983 ‘Health for All by 2000 AD’ could not be achieved due to constraints of financial resources and inadequate capacity of health infrastructure. However, the policy was successful in eradication of small pox and guinea worm disease. Polio came on the verge of being eradicated. Leprosy, kala azar and filariasis were expected to be wiped out in the foreseeable future. Meanwhile, the deadly communicable disease- HIV/AIDs appeared on the scene. An improvement in the life expectancy increased the requirement of care of older people. A high incidence of macro and micro nutrient deficiencies, especially among women and children persisted. Achievements in health services

infrastructure were quite high as an outcome of NHP-1983, but the system continued to suffer from widening inequities in access to health care and quality of care. Whenever public facilities for medical care were used, urban hospitals are preferred (NSS, 1987, NCAER, 1992). The objectives of decentralization were achieved to some extent but community participation was missing. Epidemiological surveillance services, which the NHP, 1983 had strongly recommended, were not adequately addressed. It became imperative to work on another policy document which addresses the health concerns of the people through more holistic and effective guidelines.

4.4 NATIONAL HEALTH POLICY (NHP): 2002 AND 2017

4.4.1 Goal of National Health Policy 2002

The country could not achieve many goals in NHP-1983, despite some notable gains made in health outcomes, and vast improvements in the availability of health infrastructure. The second National Health Policy was announced in 2002. Demographic changes, transitions in the occurrence of new diseases, technological advancements, rising aspirations of communities, and the rise in the impact of globalization on the country necessitated the adoption of a new policy. The major objective put forth by NHP-2002 is to achieve an acceptable standard of good health among the general population. It aims to identify deficient areas, establish requisite infrastructure, and ensure equitable access to health services across the social and geographical expanse of the country. It expects to strengthen the public health system at state level; encourage private sector involvement in service delivery, particularly for the population groups that can afford to pay; increase allocation to preventive services, strengthen curative initiatives at the primary health level, and work for rational use of drugs. The NHP-2002 specified several time-bound goals.

Major goals to be achieved	Year
Eradicate polio and yaws	2005
Eliminate leprosy	2005
Eliminate kala azar	2010
Eliminate lymphatic filariasis	2015
Achieve zero level growth of HIV/AIDS	2007
Reduce mortality by 50 per cent on account of TB, Malaria, Other Vector and Water Borne Diseases	2010
Reduce prevalence of blindness to 0.5 per cent	2010
Reduce IMR to 30/1000 and MMR to 100/lakh	2010
Increase utilization of public health facilities from current level of < 20 per cent to > 75 per cent	2010
Establish an Integrated System of Surveillance, National Health Accounts and Health Statistics	2005
Increase health expenditure by government as a per cent of GDP from the existing 0.9 per cent to 2 per cent	2010

Increase share of central grants to constitute at least 25 per cent of total health spending	2010
Increase state sector health spending from 5.5 per cent to 7 per cent of the budget Further increase to 8 per cent	2005 2010

4.4.2 National Health Policy 2017

To a large extent the above mentioned targets are achieved or reduced many communicable disease and shows improvement of maternal mortality as well as infant mortality. However new threats emerge as the increasing trends of non-communicable diseases, the problems of mental disorder and some infectious diseases which has changes in health priorities and policy. The NHP 2017 has major thrust strengthen and prioritise the role of government for health system as whole. It covered various dimensions like health investment, broaden prevention strategies, use of technology, development of required human resources, encouraging medical pluralism, effective regulation, universal access and health assurance. NHP 2017 highlights specific quantitative goals and objectives under three categories a) health status and programme impact, b) health systems performance and c) health systems strengthening as following.

a) Health Status and Programme Impact

Life Expectancy and Healthy Life

- Increase Life Expectancy at birth 70 Years by 2025
- Regular tracking of Disability Adjusted Life Years (DALY) by 2022
- Reduction of TFR 2.1/1000 at national and sub-national level by 2025.

Mortality by Age or Cause

- Reduce under five mortality 23 by 2025 and Maternal Mortality Rate 100 by 2020.
- Reduce Infant Mortality Rate 28 by 2019.
- Reduce neo-natal mortality to 16 and still birth rate to single digit by 2025

Reduction of Disease Prevalence/ Incidence

- Achieve global target of 2020 for HIV/AIDS 90 percent in known status, sustained antiretroviral therapy and continue therapy of viral suppression.
- Elimination of Leprosy by 2018, Kala-Azar by 2017 and Lymphatic Filariasis in endemic pockets by 2017.
- Achieve a cure rate more than 85 percent in new sputum positive patients for TB and elimination of new cases by 2025.
- Reduce the prevalence of blindness to 0.25/ 1000 and disease burden by one third from current levels by 2025.
- Reduce premature mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases by 25 percent till 2025

b) Health Systems Performance

Coverage of Health Services

- Increase utilization of public health facilities by 50 percent by 2025.

Population and Health Care

- Antenatal care coverage to be sustained above 90 percent and skilled attendance at birth above 90 percent by 2025.
- 90 percent of the newborn are fully immunized by 1 year of age by 2025.
- Need of family planning above 90 percent at national and sub national level by 2025.
- 80 percent of known hypertensive and diabetic at household level and maintain controlled disease status by 2025.

Cross Sectoral Goals Related to Health

- Reduction in prevalence of current tobacco use 30 percent by 2025.
- Reduction of 40 percent in prevalence of stunting of under-five children by 2025.
- Access to safe water and sanitation to all (Swachh Bharat Mission) by 2020.
- Reduction of occupational injury by half (current levels of 334 per lakh agricultural workers) by 2020.
- National/ State level tracking of selected health behaviour.

c) Health Systems Strengthening

Health Finance

- Increase health expenditure 2.5 percent of GDP by 2025.
- Increase State health spending to more than 8 percent of their budget by 2020.
- Decrease in households health expenditure by 25 percent by 2025.

Health Infrastructure and Human Resource

- Availability of paramedics and doctors as per Indian Public Health Standard (IPHS) norm in high priority districts by 2020.
- Increase community health volunteers to population ratio as per IPHS norm, in high priority districts by 2025.
- Establish primary and secondary care facility as per norms in high priority districts (population as well as time to reach norms) by 2025.

Health Management Information

- Ensure district-level electronic database on health system components by 2020.
- Strengthen surveillance system and establish registries for diseases by 2020.
- Establish integrated health information, Health Information Exchanges and National Health Information Network by 2025.

Therefore the new NHP 2017 continued with earlier unachieved goals with special thrust on composite health policy by merging many vertical programmes, it also combined two major programmes National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM). Unlike earlier policy it focussed to health for all by reducing inequality and minimizing disparity in terms of gender, poverty, caste, disability and other forms. Three major focus are also visible i.e. special thrust on preventive measures, pluralism of medical services and use of ICT. The flagship programme Swach Bharat Abhiyan has sensitize the importance

of cleanliness acted a campaign for preventive measure apart from immunization. It has focussed on alternative medicine system AYUSH (*Ayurveda, Yoga & Naturopathy* Unani, *Siddha* and Homeopathy) both for prevention and cure. Further, the use of ICT had supported the management system of health, monitoring of epidemiology, immunization and other healthcare redressed many systemic gaps.

In this section, you read about National Health Policies. Now, answer the question given in Check Your Progress 2.

Check Your Progress 2

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1) What are the objectives of NHP-2002?

.....

.....

.....

.....

.....

2) Describe the major objectives of NHP-2017?

.....

.....

.....

.....

.....

.....

4.5 NATIONAL POPULATION POLICIES: CONCEPT AND EVOLUTION

4.5.1 Evolution

Rapid population growth was identified as matter of concern even before India became independent. The National Planning Committee set up by the Indian National Congress in 1935, under the Chairmanship of Pt. Jawahar Lal Nehru, had strongly supported propagation of the knowledge and practice of family planning. The Bhore Committee, constituted in 1946 voiced concern when it observed that the public health system, as it existed in the country, would not be able to meet the demands posed by growing population, and advocated a need for limiting the family size.

After independence, the Planning Commission, Government of India, highlighted the urgency of the problem of family planning and population control. This constituted a vital component of the First Five Year Plan. In 1952, India launched

the National Family Planning Programme. The overall emphasis was on family planning for lowering the birth rate in order to ‘stabilize the population at a level consistent with the requirements of national economy’.

Observance of the small family norm by all, thus, became the goal to be achieved through family planning. In the beginning, modern contraceptive methods of family planning methods were not inducted. Various efforts were made to make people aware about the benefits of small family size through activities focused on maternal and child health care. Adoption of natural methods of contraception for limiting the family size was favoured.

This programme achieved limited success. The majority of the family planning clinics established were located either in urban areas or in large villages, leaving a sizeable population uncovered. Taking into account the shortcomings associated with this, the clinic based approach was replaced in 1963 by the extension approach. In the new approach, the Auxiliary Nurse Midwife (ANM) was to visit the houses of married couples in order to provide family planning services at their doorsteps. New methods of contraceptives were introduced.

The year 1966-67 marked a paradigm shift in the Family Planning Programme when method-specific family planning targets were fixed and allocated. A number of officials from the health department, along with other departments, were assigned family planning targets to be achieved on an annual basis with the prime goal of lowering the birth rate. However, this led to certain distortions. The programme was plagued with fake reporting of the family planning achievements by different officials in order to escape penalties associated with non-compliance of fixed targets. The 1971 Census revealed that the demographic goals, set up in 1962, had not been achieved.

The experience of two years, 1975-77, during the period termed, The Emergency, were monumental in the context of shaping of India’s population policy. In 1976, the first statement towards National Population Policy spread its net beyond family planning measures, which included measures like raising the marriageable age limit, promoting female literacy, providing employment opportunities to women, and reducing high infant mortality rate. The opening paragraphs of the National Population Policy statement argued that

- i) Reducing the rate of population increase “will be treated as a top national priority and commitment”
- ii) “To wait for education and economic development to bring about a drop in fertility is not a practical solution”
- iii) Population control must play a crucial role in the movement towards independence and social transformation.

In actual fact, the Policy Statement on the Family Welfare Programme came in 1977. It encouraged state governments to pass legislations to enhance community participation for promoting small family size norms. Such statements, tabled in parliament were neither discussed nor adopted.

There were political implications of reduction of birth rate at the state level. Since political representation in Parliament was determined by a State’s population size, a fear was expressed that its slower population growth rate would result in

a loss of relative influence through a drop in the number of seats in the national parliament. To safeguard against this possibility, representation in parliament, as also in state legislatures was frozen up to the year 2001, retaining the population enumerated at the 1971 Census as the base.

Motivation, which had been a part of the family planning programme, was supplemented by coercion and with the use of incentives, and later with harsher measures. In 1975, earnest efforts were made for the promotion of male-centred vasectomy to slow the rate of population growth. A coercive campaign was adopted to sterilize couples who already had three or more children. The programme got a severe setback due to the overemphasis on vasectomies. The programme suffered due to the ill effects of a coercive strategy. The number of vasectomy acceptors sharply declined after 1976-77, making it more or less a female oriented programme.

In 1977-78, the Government of India took measures to shift away from coercive actions, and the programme was to be implemented as an integral part of family welfare, based on mass education and motivation. The name of the programme was changed from National Family Planning Programme to National Family Welfare Programme.

In another damage control exercise, the National Health Policy-1983 stressed the need for adhering to small family norms through voluntary efforts. For attaining the goal of population stabilization, the goal to achieve the replacement level by 2000 was targeted. This has guided the Family Planning Programme since then.

In the year 1992 population policy initiatives were adopted. The 73rd and 74th Constitutional Amendments were introduced enabling the *Panchayati Raj* institutions (PRIs) and urban local bodies (ULBs), among others, to carry out the task of primary health care and primary education. The provision of basic amenities including the drinking water and roads, became the responsibility of PRIs and ULBs. The focus of the programme shifted from population control to community outreach services.

In 1994, the Swaminathan Committee was assigned the task of framing the new population policy. The draft National Population Policy incorporated a number of suggestions made at the International Conference on Population and Development (ICPD) held in Cairo in 1994. Unlike the earlier population policy statements of 1976 and 1977, the draft of the National Population Policy was widely circulated among the members of Parliament and others. This was discussed by the cabinet, followed by discussion in Parliament. Most notably, method specific contraceptive targets were abolished in 1996 and were replaced by the Target-Free Approach, later renamed as Community Needs Assessment Approach (CNAA). The agenda shifted from population control to Reproductive and Child Health (RCH) in 1997 and women's empowerment gained momentum.

The draft national population policy was approved by the Cabinet with the direction that this be placed before Parliament. Several suggestions were made during the deliberations. On that basis, a fresh draft was submitted to the Cabinet. Finally, in 2000 the National Population Policy was announced.

4.6 NATIONAL POPULATION POLICY – 2000

The goals, objectives and strategies of the National Population Policy (NPP)-2000 centred on family planning, maternal and child health. It envisages development of one-stop integrated and coordinated service delivery at the village level on these two parameters. This involves partnership of the government with non-government voluntary organizations.

The NPP 2000 has laid down objectives at three times frames: immediate, medium term, and long term. The immediate objective is to cater to the unmet need for contraception, health infrastructure, and health personnel, and to integrate service delivery for basic reproductive and child health care.

The medium term objective is to effectively implement inter sectoral strategies to bring down the Total Fertility Rate (TFR) to a replacement level by 2010.

The long term objective is to achieve a stable population by 2045, at a level consistent with the requirements of sustainable economic growth, social development and eco-conservation.

a) National Socio-Demographic Targets to be achieved by 2010: Fourteen such targets, as follows, were set to be achieved.

- i) Fulfil the unmet need for basic reproductive and child health services, supplies and infrastructure.
- ii) Make school education free and compulsory for children up to 14 years, and reduce the dropout rate for both boys and girls at primary and secondary school levels to below 20 per cent.
- iii) Bring infant mortality rate below 30 per 1000 live births.
- iv) Bring maternal mortality ratio to below 100 per 100,000 live births.
- v) Achieve 100 per cent immunization of children against all vaccine preventable diseases.
- vi) Encourage the increase in age-at-marriage of girls, not earlier than age 18, and, preferably, after 20 years of age.
- vii) Increase institutional deliveries to 80 per cent and deliveries by trained persons to 100 per cent.
- viii) Achieve universal access to information/counselling, and services for fertility regulation and contraception with a wide basket of choices.
- ix) Increase registration of births, deaths, marriage and pregnancy to 100 per cent.
- x) Enhance the IEC coverage for RTIs/STIs/AIDS to wider population.
- xi) Prevent and control communicable diseases.
- xii) Integrate allopathic medicine with Indian Systems of Medicine (ISM) for better provision of reproductive and child health services, and for reaching out to households.
- xiii) Encourage strongly the small family norm to achieve the replacement level of TFR.
- xiv) Coordinate the implementation of related social sector programs to make family welfare programme people-centric.

b) Strategies for NPP-2000: the strategy for NPP includes the following 12 measures.

- i) Decentralization of the Plan and Programme Implementation
- ii) Convergence of service delivery points in villages
- iii) Empowering women for mitigating health and nutrition problems
- iv) Strengthening child health and survival care
- v) Fulfilling the unmet need for family welfare
- vi) Meeting the needs of the vulnerable and underserved population groups constituting urban slums, tribal communities, hill area populations, displaced and migrant populations, adolescents and men in planned parenthood
- vii) Providing encouragement and incentives to diverse health care providers
- viii) Collaborating with the Commitments from NGOs and private sector
- ix) Channelling Indian Systems of Medicine and Homeopathy
- x) Strengthening contraceptive technology and research on RCH
- xi) Providing health facility for older population
- xii) Improving information, education, and communication technology for health care services.

c) New Structures to be established under NPP-2000: four new structures, as follow, were established under the policy.

- i) National Commission on Population
- ii) State/UT Commissions on Population
- iii) Coordination Cell in the Planning Commission
- iv) Technology Mission in the Department of Family Welfare

i) National Commission on Population: As recommended by NPP-2000, the National Commission on Population was constituted on 11th May 2000, the day when India reached one billion population marks. It has the Prime Minister of India as its Chairman, Deputy Chairman Planning Commission as Vice Chairman, Chief Ministers of all states, Ministers of the concerned Central Ministries, Secretaries of the concerned Departments, eminent demographers and representatives of the civil society as members.

The Secretariat of the Commission was based at the Planning Commission, New Delhi, and Government of India. However, in February 2005, the Commission was re-constituted and its Secretariat was shifted to the Ministry of Health and Family Welfare, New Delhi. The re-constituted Commission again had Hon'ble Prime Minister of India as Chairman, Deputy Chairman of the Planning Commission and the Minister for Health and Family Welfare as the Vice-Chairmen and Secretary, Family Welfare, as the Member Secretary.

The mandate of the Commission was to guide the implementation of the National Population Policy in achieving the goals, to hasten population stabilization by promoting synergy between health,

educational environmental and developmental programmes, to promote inter sectoral coordination in planning and implementation of the programmes at the Centre and States, and to facilitate the development of a vigorous people's movement in support of this national effort.

In the first meeting of the Commission held under the Chairmanship of Hon'ble Prime Minister on 23rd July 2005, a decision was taken to conduct an Annual Health Survey of all districts periodically so that health indicators at the district level could be monitored against benchmarks. Five groups of experts were set up for studying the population profile of Bihar, Uttar Pradesh, Rajasthan, Madhya Pradesh and Orissa for identifying the weaknesses in the health delivery systems so that special measures could be taken up to improve the situation in these States. Based on the guidelines issued by NCP, Annual Health Surveys are conducted by the office of the Registrar General of India. Five expert groups were constituted on 29th September 2005. The Commission, thus, over the time has been providing a policy support to the population stabilization efforts under overall framework of NPP-2000.

- ii) **State/UT Commissions on Population:** State Population Commissions have also been commissioned in as many as 21 States/UTs. The initiation of the process of policy formulation undertaken at the state level is expected to achieve the goals setup in NPP – 2000 (MOHFW, 2008-2009).
- iii) **Coordination Cell in the Planning Commission:** in place of a coordination cell, a policy convergence has been set up.
- iv) **Technology Mission in the Department of Family Welfare:** in place of a Technology Mission in the Department of Family Welfare, an Empowered Action Group (EAG) has been created.

d) Legislation

For pursuing the agenda for population stabilization of NPP-2000, the 42nd Constitutional Amendment has frozen the number of seats in Lok Sabha and Rajya Sabha till 2026, with the 1971 Census as the base.

- e) **Adoption of Small Family Norm Promotion Measures:** twenty such measures are summarized below.

NPP-2000 does not include disincentives. Rather, it has measures for promotion and motivation for achieving the small family norm. In the past, the incentives were linked with sterilizations. In the policy, these incentives are linked to poverty, delayed marriage, delivery care, birth registration, birth of a girl child, and immunization.

- Incentives to *Panchayats* and *Zila Parishads* for achieving small family norms, especially by reducing infant mortality.
- Couples below the poverty line undergoing sterilization after two children to be given health insurance
- Improving the status of women by giving some incentives at the birth of girl child Contraceptive choice to be widened and made more accessible

- Safe abortion facilities to be expanded and strengthened
- Strict enforcement of legal reforms, including Child Marriage Restraint Act, 1976 and Pre-Natal Diagnostic Techniques Act, 1994

NPP recognized that there is a large need to augment and strengthen health care services as well as to cater to the unmet needs for contraception. Though the NPP-2000 mentioned sustainable development, quality of life, education, equity, gender issues, and raising the age at marriage, the emphasis remained primarily on the family planning programme. As such, the specific goal of achieving replacement level fertility by the year 2010 could not be achieved.

4.7 INTERFACES BETWEEN HEALTH AND POPULATION POLICY

National health policy and national population policy are closely associated and supportive to overall development of any region / country. Enhance health facility reduced mortality rate, both infant mortality and maternal mortality, further reduction in fertility rate in last few decades. Women education and their empowerment also improved fertility behaviour. This fact has widely accepted in Alma Ata conference and considered development is best contraceptive to control population growth. Here, we will see continuous improvement health and population parameter (Table-4.1).

Table 4.1: Changing Health and Population Indicators

No.	States/UTs	Couple Protection Rate		Birth Rate		Infant Mortality Rate		Maternal Mortality Rate	
		1998	2011	2000	2016	2000	2016	2004-06	2014-16
1	Andhra Pradesh	49.1	61.5	21.3	16.4	65	34	154	74
2	Assam	17.6	13.1	26.9	21.7	75	44	480	237
3	Bihar	20.9	16.5	31.9	26.8	62	38	312****	165****
4	Gujarat	53.8	47.9	25.2	20.1	62	30	160	92
5	Haryana	50.7	36.9	26.9	20.7	67	33	NA	NA
6	Karnataka	55.4	49.6	22.0	17.6	57	24	213	108
7	Kerala	41.3	31.8	17.9	14.3	14	10	95	46
8	Madhya Pradesh	47.7	46.4	31.4	25.1	88	47	335***	173***
9	Maharashtra	50.7	41.8	21.0	15.9	48	19	NA	NA
10	Orissa	39.0	25.9	24.3	18.6	95	44	303	180
11	Punjab	68.9	46.2	21.6	14.9	52	21	NA	NA
12	Rajasthan	34.6	45.7	31.4	24.3	79	41	388	199
13	Tamil Nadu	50.8	41.5	19.3	15.0	51	17	111	66
14	Uttar Pradesh	39.1	27.7	32.8	25.2	83	43	440**	201**
15	West Bengal	33.8	27.9	20.7	15.4	51	25	NA	NA
16	Himachal Pradesh	50.3	41.8	22.1	16.0	51	25	NA	NA
17	Jammu and Kashmir	16.4	15.2	19.6	15.7	50	24	NA	NA

18	Manipur	21.3	8.7	18.3	12.9	22	11	375 (Assam & EAG States)*	188 (Assam & EAG States)*
19	Meghalaya	3.9	8.5	28.5	23.7	66	39		
20	Nagaland	7.9	8.4		14.0	NA	12		
21	Sikkim	20.7	23.4	21.8	16.6	47	16		
22	Tripura	25.6	13.3	16.5	13.7	35	24		
23	Mizoram	38.2	34.4	16.0	15.5	18	27		
24	Arunachal Pradesh	12.6	12.9	22.3	18.9	16	36		
25	Chandigarh	35.9	25.0	17.5	13.9	27	14	NA	NA
26	Dadra and Nagar Haveli	31.4	18.6	34.9	24.5	57	17	NA	NA
27	Delhi	29.5	18.3	20.3	15.5	32	18	NA	NA
28	Goa	27.8	31.2	14.3	12.9	21	08	NA	NA
29	Daman and Diu	31.9	18.3	23.7	24.0	54	19	NA	NA
30	Lakshadweep	7.8	4.0	26.1	18.9	22	19	NA	NA
31	Andaman and Nicobar Islands	40.8	28.7	19.1	11.7	16	16	NA	NA
32	Puducherry	57.2	65.2	17.8	13.9	20	10	NA	NA
	India	45.4	40.4	25.8	20.4	68	34	254	130

Note: * refers combined data of Assam EAG states sub-total, similarly ** indicates Uttar Pradesh and Uttarakhand, *** shows Madhya Pradesh and Chattisgarh, **** shows Bihar and Jharkhand.

Source: Data adapted from NITI Ayog, adapted from Sample Registration System and datastat.com

Both the National Health Policy (NHP)-2002 and National Population Policy (NPP)-2000 meticulously carved out a sectoral plan for reducing population growth rate by providing equitable health care facilities, right from the primary health care level. The planning was ambitious in terms of attainment of the goals that were laid out for each sector. A view of the progress made so far, is discussed below.

- i) Rapid population growth, being one major cause of all problems in India, the policy was expected to reduce fertility level or birth rate. In actual fact, the population increased from 844 million in 1991 to 1,028 million in 2001, signifying an addition of 184 million within a single decade. The crude birth rate was to reach 21.0 and total fertility to 2.1 by 2010 while CBR is noted at 23.1 and TFR at 2.7.
- ii) Eight out of every ten deliveries were targeted to be institutional while in actual practice, this figure was four out of every ten deliveries. Further, all deliveries were to be conducted under the supervision of trained persons while in reality less than half of the deliveries were assisted by trained persons (NFHS-III, 2008-09)
- iii) The NHP-2002 and the NPP-2000 expected to reach IMR at 30 by 2010. In reality, the IMR was 53 in 2009. The IMR could not be achieved.

- iv) The NHP-2002 and NPP-2000 had set the goal of reducing the MMR to less than 100 per 100,000 live births by 2010. The MMR is 254 in 2008. In all probability this seems that the target cannot be achieved.

4.7.1 State Population Policies

In the spirit of NPP-2000, 17 States/UTs have formulated their own State Specific Population Policies, defining the strategies and programmes to be followed to attain the goals. This shown desired result reduction in Total Fertility Rate (TFR), from 3.6 in 1991 to 2.3 in 2013. Twenty four states/UTs have already achieved replacement level of TFR by 2013, while states like UP and Bihar with large population base still have TFR of 3.1 and 3.4 respectively. The other states like Jharkhand (2.7), Rajasthan (2.8), Madhya Pradesh (2.9), and Chhattisgarh (2.6) continue to have higher levels of fertility and contribute to the growth of population. World Population Prospects released by United Nations (revision 2015), the estimated population of India will be 1419 million approximately whereas China's population will be approximately 1409 million, by 2022. In spite of the perceptible decline in India is yet to achieve replacement level of 2.1.

In this section you studied about the population policies. Now, answer the questions in Check Your Progress 3.

Check Your Progress 3

Note: (a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

- 1) What are the major objectives of the National Population Policy-2000?

.....

.....

.....

.....

.....

- 2) What are the new structures recommended by NPP-2000?

.....

.....

.....

.....

.....

4.8 LET US SUM UP

After going through this unit you must have understanding about how health and population policy evolved and its change with upcoming needs. According to policies, programmes planned toward preventative, curative health care delivery as well as control the population. Major changes observed in post independence era, The National Family Planning Programme was launched in 1952. Since

then, the successive five year plans have been providing the framework for developing health service infrastructure and regulating population growth. In the 1950s and 1960s, the focus of the health sector in India was on the control of epidemics. By the end of the 1980s, India had built up a substantial health infrastructure and initiated several national health programmes. Over time, the emphasis of these programmes shifted from communicable to non-communicable diseases, including the diabetes, cardio vascular disease, deafness, and control of cancer. With the growing realization that public health initiatives had not met with the desired success, a National Health Policy, in 1983, was adopted as a corrective measure. This goal, too, could not be achieved due to constrained financial resources and inadequate capacity in the public health sector. Achievement of an acceptable standard of good health for all became the hallmark of NHP-2002. Recently, NHP 2017 came with a composite national health policy with special thrust broaden immunisation and new emerging non-communicable health problems.

A formal National Population Policy was articulated in 2000. It underlined goals, objectives and strategies centred around family planning and maternal and child health. As envisaged in the policy, the National Commission on Population was set up in 2000 at the Centre. Following this, State and Union Territories Commissions on Populations have also been put in place and resulted in reduced total fertility rate to 2.3. The high rate of population growth, though significantly reduced, but continues to have an adverse effect on the health of people.

4.9 REFERENCES AND SELECTED READINGS

Ministry of Health and Family Welfare (1983), *National Health Policy-1983*, Government of India, Nirman Bhawan, New Delhi.

Ministry of Health and Family Welfare (2002), *National Health Policy-2002*, Government of India, Nirman Bhawan, New Delhi.

Ministry of Health and Family Welfare (2017), *National Health Policy-2017*, Government of India, Nirman Bhawan, New Delhi.

Srinivasan, K (2006), *Population Policies and Family Planning Programmes in India: A Review and Recommendations*. International Institute for Population Sciences (IIPS), Newsletter, January 2006, Mumbai.

4.10 CHECK YOUR PROGRESS –POSSIBLE ANSWERS

Check Your Progress I

- 1) Write a brief note on Health Committees constituted in India?

Ans. The various health committees constituted in India are:

Health Survey and Planning Committee Report or Mudaliar Committee Report, 1962 laid stress on developing health services infrastructure and the health cadre at the primary level. It also recommended setting up of grassroots level workers in the form of auxiliary nurse midwives. Chadha

Committee Report (1963) called for the adoption of malaria eradication programme. The Mukerji Committee Report (1966) worked out the details of the basic health services to be provided in rural and urban areas.

Check Your Progress 2

- 1) What are the objectives of NHP-2002?

Ans. The major objective of NHP-2002 is to achieve an acceptable standard of good health among the general population. It aims to identify deficient areas, establish requisite infrastructure, and ensure equitable access to health services across the social and geographical expanse of the country. It expects to strengthen the public health system at the state level; encourage private sector involvement in service delivery; increase allocation to preventive services, strengthen curative initiatives at the primary health level, and work for rational use of drugs.

- 2) Describe the major objectives of NHP-2017.

Ans. The NHP 2017 has major thrust strengthen and prioritise the role of government for health system as whole. It covered various dimensions like health investment, broaden prevention strategies, use of technology, development of required human resources, encouraging medical pluralism, effective regulation, universal access and health assurance.

Check Your Progress 3

- 1) What are the major objectives of the National Population Policy-2000?

Ans. The NPP 2000 has laid down objectives at three points: immediate, medium term, and long term. The immediate objective is to cater to the unmet need for contraception, health infrastructure, and health personnel, and to integrate service delivery for basic reproductive and child health care. The medium term objective is to effectively implement inter sectoral strategies to bring down the total fertility rate (TFR) to a replacement level. The long term objective is to achieve a stable population by 2045, through economic growth, social development, and eco-conservation.

- 2) What are the new structures recommended by NPP-2000?

Ans. Four new structures, including the National Commission on Population, State/UT Commissions on Population, Coordination Cell in the Planning Commission, and Technology Mission in the Department of Family Welfare were proposed to be established under the NPP-2000. The National Commission on Population was set up in 2000, State Population Commissions have also been commissioned in many States/UTs.

